Medical Lib.

CALIFORNIA STATE JOURNAL OF MEDICINE

IMPORTANT MEDICAL MEETINGS

The State Medical Society

Meets in San Francisco, Friday and Saturday, June 22 and 23.
Please send in titles to papers, and make your hotel reservations.
Watch your Journal for information and write to the State Secretary for any service or assistance.
See page 129 of this Journal.

The American Medical Association

Meets in San Francisco, Monday to Friday, June 25 to 29. The Association is the guest of the State Medical Society. Plan to attend the convention and do your bit as host.
Watch the Journal of the A. M. A. and your own State Journal for information.
Write to the General Chairman of the California Committee, 806-809 Balboa Building, San Francisco, for any service or assistance.
See page 128 of this Journal.

Other Medical Organizations meeting in San Francisco between June 21 and June 30 include:

The American Society of Tropical Medicine;
Woman's Medical Association;
American Radiographical Society;
American Radium Society;
American Association of Anesthetists;
Pacific Coast Association of Anesthetists, and probably a number of others.

MARCH · 1923

Vol. XXI. No. 3 $4.00 a Year, Single Copies 35 Cents

California State Journal of Medicine

OWNED AND PUBLISHED MONTHLY BY THE MEDICAL SOCIETY OF THE STATE OF CALIFORNIA
Entered at San Francisco, California, as Second-Class Matter

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VOL. XXI MARCH, 1923 No. 3

ORIGINAL ARTICLES

RESPONSIBILITY FOR STATEMENTS AND CONCLUSIONS IN ORIGINAL ARTICLES

The author of an article appearing in the JOURNAL *is entirely responsible for all statements and conclusions. These may or may not be in harmony with the views of the editorial staff. Furthermore, authors are largely responsible for the language and method of presenting their subjects. All manuscripts will be carefully read, but editorial privileges will be exercised only to a very limited extent. It is believed that the manner of presentation of any subject by any author determines to no small degree the value of his conclusions. Therefore, both the author and the reader, in our opinion, are entitled to have the subject as presented by the author as little disturbed as possible by the editors. However, the right to reduce or reject any article is always reserved.*

PASTEUR'S CONTRIBUTION TO CHEMISTRY

By CARL ALSBERG
From the Food Research Institute, Stanford University

When Lewis Carroll wrote "Through the Looking Glass," describing what Alice saw in "Looking Glass House," where, as Alice says, there is a drawing room "that's just like our drawing room only the things go the other way," and where there are "Looking Glass Books" that Alice could read only if she held them up to a glass so that "the words will all go right again," he turned one of Louis Pasteur's greatest discoveries into a deliciously whimsical fairy tale. Pasteur it was who discovered the looking glass world of matter in which each substance has its looking glass counterpart; and this was a very great discovery for it proved that atoms are arranged in definite patterns in the molecule and that often this arrangement is not symmetrical. It led to the development later by LeBel and by Van't Hoff of the theory of the asymmetry of the carbon atom, to the idea that atoms in the molecule occupy three dimensions—in fact to the whole science of stereochemistry. Pasteur is the father of stereochemistry, the science of the arrangement of atoms in space. The concepts of stereochemistry have been immensely fruitful, both in the physical and in the biological sciences.

That some substances like quartz crystallize in two forms, one of which is the mirror image of the other, was known before Pasteur began work. That if a ray of polarized light be passed lengthwise through such crystals, its plane is rotated by one type of crystal to the right, by the other to the left, was also known.

That some substances like sugar or tartaric acid rotate polarized light when in solution was also known before Pasteur's researches, and this was supposed to be due to some property of the molecule itself. What this property of the molecule was remained unknown. Pasteur showed that it was the asymmetrical arrangement of the atoms in the molecule. By this he meant that the arrangement was such that in no conceivable way could the molecule be divided into equal and identical parts. One side is always lopsided as compared with the other.

He presented much evidence in support of this theory but the most convincing was his work upon racemic acid. This is a form of tartaric acid which crystallizes neither in right-handed nor in left-handed crystals. Its crystals are all symmetrical. Its solutions do not rotate polarized light. Pasteur succeeded in separating it into two acids, one crystallizing in right-handed crystals, the other in left-handed crystals, like Alice's real and "looking glass" books. Properly oriented, the right-handed form turns light to the right, the left-handed form to the left. One is the mirror image of the other, just as the image of your right hand when you hold it up to the looking glass is alway a left hand. Moreover, when Pasteur dissolved the two acids in water in equal proportions, the solution no longer affected polarized light. The two acids, rotating light as they do equally in opposite directions, nullify the action of one another. When Pasteur caused the mixture to crystallize, he obtained again the symmetrically crystals of racemic acid with which he began.

Now one of the two tartaric acids that Pasteur separated from racemic acid is identical with the tartaric acid found in the cream of tartar of grapes. Pasteur recognized that practically all substances found in nature with an asymmetric structure are the product of life. He therefore imagined protoplasm itself to consist of or contain substances of an asymmetric molecular structure. He speculated much concerning how this has come about. He assumed that although the earth is a sphere, at least approximately, sunlight does not act symmetrically upon the surface of the earth,

but always in one direction, because the earth turns always in the same direction upon its axis. Now all life derives its source of energy from the sun. Therefore Pasteur imagined that it is the asymmetric way in which the rays of the sun act upon the surface of the earth that is responsible for the asymmetric action of living things. He performed many experiments to test this hypothesis, however, without success. Up to the present day no one has been able in a conclusive manner finally to imitate the asymmetric action of protoplasm in the synthesis of organic substances.

As just indicated, Pasteur began with research in crystallography, as far away as is perhaps conceivable from biology. It may seem a far cry from crystallography to biology and to the study of disease, but every step in Pasteur's road from crystallography and the inanimate to biology and the organized was logical and the direct development of previous work. In considering the evolution of Louis Pasteur from a mineralogist and crystallographer to perhaps the first biologist of his time, we must remember that in the first half of the last century the sciences dealing with the inorganic and inanimate were not separated sharply from those dealing with the organic and living. There was not that clear division between the physical and biological sciences with which we are familiar today. Many of the phenomena which today we recognize as biological, then were regarded as purely chemical, for the simple reason that very little indeed was known about micro-organisms. That in alcoholic fermentation, for example, the conversion of sugar into alcohol and carbonic acid was the expression of the metabolism of micro-organisms was not known. Fermentation seemed to the scientists of those days a purely chemical phenomenon. To be sure micro-organisms had been discovered by the great Dutch microscopist Leuwenhoek, but that micro-organisms are responsible for many of the profound changes organic materials undergo in nature was quite unsuspected except by a few botanists—especially Cagniard Latour and Schwann. Their ideas had made but little headway for they were merely botanists, and what right had botanists to pass on purely chemical phenomena? Such being the state of scientific opinion, it is evident that the evolution of Louis Pasteur from a crystallographer to a biologist and pathologist meant a less violent revolution than a corresponding change in a man's career would mean today. This we must keep in mind in order to understand his scientific development.

We have already seen how Pasteur's crystallographic work upon asymmetric crystals brought him into the fields of biological phenomena. The same study brought him directly into the field of fermentation, one of the battlegrounds of science of his time. He came to study fermentation as a continuation of his work upon asymmetry. In lactic acid fermentation and to a less degree in alcoholic fermentation amyl alcohol is formed. Fermentation amyl alcohol is optically active, that is to say, it rotates the plane of polarized light passed through it. The formation of an optically active substance in fermentation was difficult for Pasteur to explain, on the basis of the Liebig hypothesis of fermentation then prevailing. The Liebig hypothesis was a purely chemical one in that it assumed that fermentation was merely the decomposition of sugar and in that it left no room for the intervention of living forms. Now Pasteur had learned that whenever he decomposed even to a slight degree an optically active substance, it lost its optical activity, that is to say, its asymmetric structure. If Liebig's hypothesis of fermentation was correct, it was difficult to conceive how an optically active substance such as sugar could be decomposed into other substances which like amyl alcohol retain some of the optical activities of sugar. This was entirely contrary to Pasteur's experience with optically active substances. He therefore regarded the origin of this alcohol as more profound than called for by the Liebig theory of fermentation. Recalling the fact that life alone is capable of creating full-fledged new asymmetry and thinking that his objection would no longer have a basis if between the sugar and amyl alcohol a living organism was interposed, Pasteur found himself led quite naturally to regard fermentation as a vital action and to range himself upon the side of the so-called vitalists, Cagniard Latour, Schwann and others. His study of lactic fermentation led him to the discovery of the lactic acid bacteria and to the proposal of the hypothesis that fermentation in general is merely the expression of the vital activity of living forms and to regard the organic matter which is decomposed in fermentation merely as food for the ferment. It is evident therefore that Pasteur's scientific evolution was perfectly logical when he advanced from crystallographic studies to the investigation of fermentation. Each other phase of his career was as logical; but these later phases will be dealt with by the other speakers of the evening.

Court Decisions—The United States Supreme Court upholds vaccination in the case of Zucht vs. King, says the National Health Legislative Summary of recent date. "In an opinion delivered November 13, 1922, too late to get into our Court Decisions Number (Statement No. 37), the United States Supreme Court upheld again the right of a city to require vaccination as a prerequisite for attending school. The Zucht girl was excluded from a public school in San Antonio, Texas, because she was unvaccinated. She brought an injunction against enforcement of the local ordinances, asked a writ of mandamus to compel her admission to school, and also asked for damages. A judgment against her was affirmed by the Court of Civil Appeals for the Fourth Supreme Judicial District of Texas, and an application for writ of error to the Texas Supreme Court was denied. Writ of error was granted to the U. S. Supreme Court, the error assigned being that the due process and equal protection laws of the Federal Constitution had been violated. The court stated that it has long been held to be within the police power of the State to require compulsory vaccination and that power can be delegated to municipal authority.

Quoting further from this summary we read: "The Federal Maternity and Infancy Act has not yet been argued before the Supreme Court in the case of Massachusetts vs. Mellon, et al., which is pending. The return is set for January 2, 1923."

SOME OF THE FUNDAMENTAL CONTRIBUTIONS OF PASTEUR TO BACTERIOLOGY.*

By W. L. HOLMAN, M. D., Palo Alto
From the Department of Bacteriology and Experimental Pathology, Stanford University Medical School

Dr. Alsberg has shown you the road by which Pasteur entered bacteriology—the road of chemistry. The last two speakers will tell you about the sensational discoveries that crowned his work, and which immortalized him. Dr. Fitzgerald has for you the story of Immunity against Anthrax, and Dr. Kellogg the discovery of the treatment of rabies which carried his name all over the world, and led to the establishment by international subscription of the Pasteur Institute.

It might be thought that without this rich material I would find comparatively little to say, but such is not the case. My regret is that I have only a bare fifteen minutes in which to sketch for you from the tremendous canvass of his life a little picture that may tell you something of what it was. I am afraid there will be many lines drawn too faintly and others crude and blurred, but you must bear with me because the subject is a very wonderful one.

Two startlingly new biological facts were given to science in his early work in bacteriology. The first was that of life without air—the discovery of the anaerobic bacteria—destined to play such an important role in the history of bacteriology. It began in 1861 with the discovery of the butyric acid vibrio, and was followed by his finding the vibrion septique, as a result of which "there disappeared, with one wave of the wand, the greatest of the objections to the new etiology of anthrax." In his study of the septic vibrio, he tells us things that are as new as the late war. In 1878 Pasteur knew of its presence in the soil, a fact so disastrously demonstrated in the trenches of France and Belgium; he knew of its being in the intestines, and its growing out into the tissues; he knew of wound infections, and in discussing treatment, after proposing "to wash the wound unceasingly with common aerated water, or to flood the surface with atmospheric air" as "the best means of preventing death," he adds: "Furthermore, under these conditions, one might expose the surface of the wound to air heavily charged with the germs (spores) of the septic vibrio, or wash it with water, holding in suspension billions of these germs without producing the least septicemia in the patient. But, under similar conditions, let a single clot of blood, or a single fragment of dead flesh, lodge in a corner of the wound sheltered from the oxygen of the air, where it is surrounded by carbonic acid gas, even though it might be over a very small area, and beginning at once the septic germs will give rise, in less than twenty-four hours, to an infinite number of vibrion multiplying by fission and capable of causing in a very short time a mortal septicemia." This is what it took the surgeons in France over two years to learn, and contains the germ of the most modern views and methods of treatment.

The second new and equally astonishing fact was that of the resistance of bacteria to the temperature of boiling water. This was discovered during the discussion of spontaneous generation, and was a necessary fact for the solution of that important problem. It became essential for the logical development of his work, that this question should be finally closed. In his study of fermentation, Pasteur learned that spontaneous generation could not be. A great deal had been done on this subject before him, and it looked like a hopeless confusion to the scientists of the day. It is rare that the human mind sees simply, but Pasteur's did. His friends pleaded with him. "You will never find your way out," cried his close adviser, Biot. "I shall try," replied Pasteur modestly. Dumas warned him, "I would advise no one to dwell too long on such a subject."

Perhaps Pasteur's greatest contribution to bacteriology, and to all related sciences, was this supreme confidence in the experimental method of attack. There is no time to tell you, even briefly, the brilliant story of Pasteur's success. Out of it came all our most important methods of technic; the use of the autoclave; the means of pasteurization; the flaming of our instruments and glassware; the importance of the reaction of culture media and the relation to oxygen; the Chamberland filter; the fertile idea that germs could exist in a living state and not develop; and lastly, the significance of resistant spores.

It is interesting and profitable to recall that many of the greatest of these established facts resulted from the continuous attacks on his work by Bastian, who died in 1915 still believing in spontaneous generation, and whose son continued the arguments in a series of letters in the London Lancet as late as 1919. The greatest thing about this sharp and agitated discussion was the excellent preparation it gave Pasteur for the combats to come.

I wish I might fill in the details of his growth until he came to fulfill the prediction of Robert Boyle, made 200 years before, that "he who could probe to the bottom the nature of ferments and fermentations, would probably be more capable than anyone to explain certain morbid phenomena." The results, marvelous as they are, give but a poor picture of the thrilling days in the laboratories when they were being laboriously worked out.

He devoted six years to the study of the diseases of silk-worms, and in after years he advised young medical students who learned the path to his laboratory to read his two volumes on the subject, for the great teachings of microbial pathology are already found there. He began by being deceived, but was led back continuously to the truth by experiment, and ended by unraveling all the obscurities. To put it shortly, he saved the silk industry of France and the world, and demonstrated anew the tremendous value of experimental research. At first he confused two separate diseases, and what he learned in finding himself,

* Read at the January meeting of the San Francisco County Medical Society.

made of him the one man in the world of science trained to grasp the opportunities of the future. He learned about parasitism; the difference in receptivity to germs in different individuals of the same species; the augmentation of virus by animal passage; the importance of the routes of infection; and he laid the foundation for the experimental study of contagion and heredity.

Pasteur was soon called upon to settle, or to help to settle, the question of the transformation of one species into another. This was really a remnant or outgrowth of the spontaneous generation beliefs, and is not yet completely purged from scientific circles. Pasteur began with an error, and he loved to cite it as an example of the ease with which the least preconceived idea leads even the most alert observer into error. "I have once had occasion to believe in the transformation of one organism into another, in that of the mycoderma vini or cerevisiae into yeast," he says, "and this time I was in error. I did not know how to avoid the cause of error which my justified confidence in the germ theory had led me to discover so often in the observations of others."

It is pleasing to recall here the letter written to Lister in which this same subject appears. This letter dated February 27, 1874, is in reply to one from Lister, the one which gratified Pasteur so much that he quoted it in his book on the fermentation of beer, published in 1876. Lister had referred to a study of his own, in which he believed a transformation had occurred, and Pasteur at once fixed upon the weak point in the chain of evidence, and after outlining an experiment to demonstrate this, he says, "Your method of culture is remarkable for its exactitude and for the appreciation it shows of the difficulties of this class of studies, but I venture to tell you that I could wish it were more vigorous still, and to be more sure about the purity of your sowings. I should like to go on, but writing soon fatigues me. In the month of October, 1868, I was struck with paralysis of the left side, and I have only half recovered from this terrible shock. My head can only stand, at one time, a limited dose of effort and work. Bending my head especially when I write is very painful to me. But I leave you with regret."

It is hardly appreciated that Pasteur did his most remarkable and famous work after a catastrophe that so often marks the end of life's activities. This disbelief in bacterial transformation did not, however, prevent Pasteur from recognizing marked variations in function and morphology of micro-organisms under varied conditions of growth.

When Pasteur took up the studies of the etiology of microbial diseases in animals and man, he was well armed for the contest, and the results showed the value of his self-developed training.

In reviewing the beliefs up to the time of Pasteur, one must be careful not to misinterpret the terms found in the literature. Henle had theoretical views which somewhat foreshadowed the theory established by Pasteur, but Henle looked upon the germ as something belonging to the sick person, borrowing from him a sort of pathological vitality; but nothing is to be found of the new idea brought by Pasteur concerning the living virus which can be cultivated and modified outside of the organism. Virchow's views explained disease by the anatomy of the tissues. Every pathological modification was only a physiological transformation developing in an organ which could not endure it, or at a time when it was abnormal. Parasitic organisms were taboo at this time.

The history of anthrax illustrates with what a clear vision Pasteur approached a difficult subject. Our knowledge of the bacillus of anthrax began in 1850, when little rods were seen by Davaine in the blood of anthrax cattle. In 1855 Pollender demonstrated that they were not fibrin filaments, but behaved on the contrary like vegetation, and the relation to the disease was suggested. It took 30 years to settle this suggestion.

One of the chief confusions was that arising from the presence in dead animals of the vibrion septique, the anaerobic bacillus mentioned above, when the animal died, not of anthrax, but of some other disease. This bacillus resembles under the microscope the rods of anthrax. Moreover, it was said that the rods seen so often in anthrax blood may accompany the virus of anthrax, but they are not the cause. "The virus is not something independent of the animal, but a modality of its being. It is living, it may be granted you, but it borrows its life from the being which carries it; it is nothing outside of the animal, and we recognize it only in transit through living beings."

A note by Pasteur in 1861 on the butyric acid bacterium reawakened the interest of the first observer, Davaine, and the results he obtained would certainly suffice to prove today the relationship between the bacterium and the disease. Koch in 1876, in a remarkable piece of work, had followed the life history of the anthrax bacillus, and showed the outstanding importance of the spore in the history of the disease. He used eight successive cultures, and reproduced the disease from the last growth. The amount of his culture medium was, however, so small that the results could still be explained by the presence of a diluted virus accompanying the bacillus, but independent from it. Then came Pasteur. He grew the bacillus in flasks of 50 cc. of neutral urine, transferred a drop to a new flask, and thus in three transfers had a dilution of the original material of about one in one billion. He continued his transfers until he had reached the fortieth, the fiftieth, the hundredth flask, and from these latter the disease was as readily produced as from the original blood. This was the demonstration given in the note of April 30, 1877, with a clearness and conciseness truly marvelous.

The discovery of the septic vibrio settled all other objections, and after this we can truly say that the theory of germs became established as a fact.

Pasteur did many other fundamental things in bacteriology, such as the demonstration of the effect of the filtered serum from anthrax in agglutinating red blood cells. This was the first phenomenon of the kind. He followed it by the

discovery of the toxic principle from filtered cultures of the bacillus of chicken cholera, which organism he also unearthed, and he thus laid the foundation for our knowledge of toxines. He was an indefatigable worker. He found the cause of boils, the staphylococcus, and finding it in a case of osteomyelitis he pronounced this a "boil of the bone," "a heresy to thus confound internal and external pathology."

The picture of Pasteur in the Academy of Medicine supporting his view of the question of puerperal infection is delightful. "One day, in a discussion on puerperal fever, at the Academy of Medicine, one of the most renowned of his colleagues made an eloquent dissertation on the causes of epidemics in the maternity hospitals. Pasteur, from his place in the audience, interrupted him: "The cause of the epidemic is nothing of the kind! It is the doctor and his staff who carry the microbe from a sick woman to a healthy woman!" And when the orator replied that he was convinced that no one would ever find this microbe, Pasteur darted to the blackboard and drew the organism with its chaplets, saying, "There! There is its picture!"

Thus we have a wonderful example of this clear thinking, unconquerable worker piling up discovery after discovery, each one enough for one ordinary man's fame, and doing it all with a modesty that does the heart good.

United States Steel Company Orders Setting-up Exercises for Office Employees—Recently the United States Steel Company issued an order that all officers and employees in the general offices shall take setting-up exercises on the company's time in the rooms in which they work for ten minutes in the morning and ten minutes in the afternoon of each day. During the period of these exercises all business of the corporation is suspended, including even telephone messages. This is an important and initiative movement going in the right direction. Corporations and business houses with considerable office force would add to the efficiency of their employees and increase the volume of work by imitating the practice of the United States Steel Company.

Science is the topography of ignorance. From a few elevated points we triangulate vast spaces, inclosing infinite unknown details. We cast the lead, and draw up a little sand from abysses we may never reach with our dredges.

The best part of our knowledge is that which teaches us where knowledge leaves off and ignorance begins. Nothing more clearly separates a vulgar from a superior mind, than the confusion in the first between the little that it truly knows, on the one hand, and what it half knows and what it thinks it knows on the other.—Holmes' Medical Essays.

A medical school is not a scientific school, except just so far as medicine itself is a science. On the natural history side, medicine is a science; on the curative side, chiefly an art. This is implied in Hufeland's aphorism: "The physician must generalize the disease and individualize the patient."—Holmes' Medical Essays.

LOUIS PASTEUR—HIS CONTRIBUTION TO ANTHRAX, VACCINATION AND THE EVOLUTION OF A PRINCIPLE OF ACTIVE IMMUNIZATION.

By J. G. FITZGERALD, M. D.
(From the Department of Hygiene and Preventive Medicine and the Connaught Antitoxin Laboratories. University of Toronto)

In no other of the many fundamental contributions which Pasteur made to scientific knowledge has his extraordinary clarity of vision been more manifest than in his work on anthrax.

At the time (1877) when he began his investigations, first, in relation to the nature of the causative agent of the disease and later with respect to the question of protection against anthrax the actual knowledge of causation of communicable and epidemic diseases in general was in utter confusion.

Because of the great economic losses occasioned through the death of sheep and cattle from anthrax, several scientific workers before Pasteur, had interested themselves in the problem of its etiology. None of them, however, had satisfactorily resolved the question. In 1838 Delafond of the Alfort Veterinary College had observed and demonstrated in the blood of anthrax animals "little rods" to which he attached no importance, regarding them merely as a curiosity. Twelve years later in 1850 Davaine and Rayer again saw anthrax bacilli in the blood of animals that had died of the disease, without, however, appreciating their significance.

In the meantime, Pasteur published his paper dealing with the micro-organisms which are responsible for butyric acid fermentation. This paper greatly impressed Davaine and a number of years later in 1863 a physician, in whose neighborhood a number of sheep had died of anthrax, sent a sample of blood from these animals to Davaine, who found in it tiny bodies which he called "bacteridia." These he believed to be the cause of anthrax. This view he made public.

Immediately attempts were made to repeat his work because, of course, if true, it was of fundamental importance, since at this time, 1863, no so-called communicable disease had conclusively been shown to be due to a living micro-organism. At the important school of Val de Grace, Jaillard and Leplat were unable to corroborate Davaine's findings. Davaine himself repeated the work of these other investigators and concluded that the inoculum they had employed had not been obtained from a definite case of anthrax. Jaillard and Leplat at once obtained blood from an authenticated case of the disease and while rabbits died when inoculated with this material, their blood in turn did not show the presence of the little rods or "bacteridia."

About this time, 1876, Robert Koch began his studies of anthrax and introduced the first solid culture medium for the purposes of his investigation. He observed the vegetable and spore forms of

the anthrax bacilli and carefully investigated the pathogenicity of anthrax cultures for mice, guinea-pigs and rabbits. These bacilli now were definitely designated B. anthracis, and their etiological relationship to anthrax seemed to have been finally settled.

Just at this time, 1877, Paul Bert, a very distinguished French scientist, reported that he had been able to destroy anthrax bacilli contained in a drop of blood by exposing them to compressed oxygen; to inject the material remaining after such exposure to oxygen into suitable animals and produce the disease in them without, however, any anthrax bacilli being found in their blood. He concluded, then, that "bacteridia are neither the cause nor necessary effect of splenic fever (anthrax) which must be due to a virus." Confusion once more reigned in regard to the whole matter.

Pasteur undertook to investigate the question. He took a small amount of blood from an animal that had died of anthrax, and with all aseptic precautions planted it in a sterile flask containing a slightly alkaline, sterile culture medium—he used urine for the purpose. In this medium he grew cultures of the anthrax bacilli. He noted the characteristic tangled filamentous skeins of bacilli in the medium. He subcultured his growths by carrying over from flasks in which the bacilli were growing a few drops to other flasks of sterile culture medium, thus seeding it and giving rise to new generations of these micro-organisms.

A drop of culture material from flasks so inoculated, injected into susceptible animals, produced in them the disease anthrax. He thus conclusively established the etiological relationship of B. anthracis to the disease anthrax. He showed furthermore that there were two distinct forms, the vegetative and spore, which anthrax bacilli might assume.

Pasteur, with a number of other investigators, in 1877 constituted a commission to examine into the discordant results of Jaillard and Leplat and Paul Bert. To summarize briefly, they learned that these other workers had been dealing with mixed cultures of B. anthracis and a septic vibrio. The former an aerobe, the latter an anaerobe. Pure cultures of both were obtained by Pasteur and under appropriate conditions, each was grown in artificial media. The septic vibrio was shown to be highly pathogenic for rabbits and this fact explained Jaillard and Leplat's results.

The true explanation of Paul Bert's findings was next given by Pasteur when he was able to demonstrate that compressed oxygen destroyed the vegetative forms but not anthrax spores. Bert had destroyed the vegetative forms. The spores resisted and were capable of transmitting infection. Paul Bert himself to the Societe de Biologie in 1877 announced his mistake and accepted Pasteur's interpretation of the experimental results he had obtained. Many doubts remained in the minds of certain skeptical observers of that time, but today it is realized that this work was of the most fundamental importance and blazed the trail for much of the splendid progress in bacteriology of the next 25 years.

Three years later, in 1880, were begun a series of experiments which were as profoundly to influence the future of specific prevention of disease as did the monumental work of Edward Jenner, carried on nearly one hundred years before. By chance, (and here it is well to recall Pasteur's immortal words "by chance you will say; chance only favors the mind that is prepared") or as his son-in-law, Vallery-Radot, has expressed it: "A chance such as happens to those who have the genius of observation." In examining some old cultures of the micro-organisms of chicken cholera it was learned that these cultures which had been put away and not replanted for several weeks had lost nearly all the virulence or pathogenicity possessed by young, vigorously growing cultures, replanted daily. Hens injected with small amounts of the old cultures of chicken cholera developed some of the symptoms of the disease, but soon recovered. On recovery, if subsequently inoculated with young virulent cultures of chicken cholera germs, these hens remained refractory or immune and developed no symptoms of the disease.

Pasteur at once appreciated the fact that an underlying fundamental principle of active immunization had been demonstrated in his work on chicken cholera. He learned by experiment, that the micro-organisms of this disease could be reduced to any desired degree of virulence by prolonged growth and exposure to an abundant supply of oxygen. He produced in this manner two bacterial vaccines, one of stronger, the other of weaker virulence and by inoculating normal hens with a dose of each vaccine they were rendered immune to spontaneous or artificial infection with living highly virulent microbes of chicken cholera.

While it is true, and Pasteur was the first to proclaim it, that the principle of attenuation of virulence underlying vaccination aganist smallpox, as demonstrated by Jenner, served to guide him in this work, the fact remains that this was the first instance in which a pathogenic microbe was isolated in pure culture, studied and employed as a bacterial vaccine after appropriate attenuation of virulence had been achieved. Furthermore, important facts relating to methods of attenuation were also gleaned during the progress of the work.

During the next year, 1881, in association with Chamberland and Roux, Pasteur applied himself to the problem of vaccination against anthrax. This was a much more difficult task, however, because of the greater virulence of anthrax bacilli. Toussaint, a distinguished French veterinarian, had just published a communication in which he claimed he had succeeded in vaccinating sheep against anthrax. He had taken blood from sheep suffering from the disease just before or immediately after death, heated it to 55 degrees C. for 10 minutes and inoculated normal sheep with this heated blood.

Pasteur, Chamberland and Roux soon learned through experimentation that anthrax bacilli, while they might sometimes be inhibited in their growth by heating to 55° C., were not necessarily killed. Toussaint then employed carbolic acid for the purpose of attenuating the virulence of

his cultures. This procedure also proved to be very uncertain. After a long series of experiments in which chief reliance was placed on physical methods, for the attenuation of virulence and inhibition of growth and spore formation (this latter was really the crux of the difficulty) it was ascertained that the growth of anthrax bacilli in a neutral broth medium was inhibited at 45° C. It was also learned that they can be readily cultivated at 42° or 43° C., but at these temperatures spores do not develop. This latter discovery paved the way for the development of a sound method of anthrax vaccination which obviated the necessity of resorting to the procedure of Toussaint, which had proved to be uncertain and dangerous.

Pasteur's method consisted in growing anthrax bacilli in neutral chicken broth at 42° C. for twelve and twenty-four days, respectively, during which time a marked reduction in virulence of the microbes occurs. After twelve days' growth under the above conditions the culture was no longer able to kill rabbits, but was fatal for guinea pigs or mice. After 24 days' growth it is no longer virulent for guinea pigs, but still was able to kill mice. The more fully attenuated cultures constituted the "premier vaccin." Cattle or sheep, when being immunized, were first given a dose of the weaker culture and ten or twelve days later a dose of the stronger one.

On May 5, 1881, at the farm of Pouilly le Fort, near the little town of Melun, was begun the practical test of Pasteur's anthrax vaccine, which has become famous in the annals of scientific medicine. Fifty sheep and ten cows were used for the experiment, twenty-five of the sheep and six cows were vaccinated and twenty-five sheep and four cows were not. The first injections of vaccine were given May 5, the second on May 17. On May 31 a third and final injection was also given. On the same day all the animals were injected with a quantity of living, virulent culture of anthrax bacilli. By June 5 all the unvaccinated sheep were dead and only one of the vaccinated; this one had aborted and died of hemorrhage. All the others remained perfectly well. The six vaccinated cows were quite normal and the four unvaccinated presented enormous oedemata.

Pasteur's triumph was complete and he was acclaimed by the whole of France. The government recognized his great service to science and to agriculture in formally awarding him the Grand Cordon of the Legion d'honneur. In August of the same year he represented the government of the French republic at the International Medical Congress in London. There he received a most remarkable ovation and was the center of interest during the meetings of the congress. The London correspondent of the Paris Journal des Débats wrote to his paper as follows, describing the events: "When M. Pasteur spoke, when his name was mentioned, a thunder of applause arose from all benches from all nations. An indefatigable worker, a sagacious seeker, a precise and brilliant experimentalist, an implacable logician and an enthusiastic apostle, he has produced an invincible effect on every mind."

For the past forty years active immunization on a very large scale against anthrax has been carried on in many parts of the world with much success and with very great economic benefit to the communities concerned.

Since 1881 bacterial vaccines have been developed for the specific prevention of typhoid and paratyphoid fevers, bacillary dysentery, asiatic cholera, bubonic plague, pneumonia, whooping cough and other diseases of microbic origin. Many of these have found a very wide field of usefulness and enormous success has attended the employment of certain of them. The results obtained from the use of typhoid and paratyphoid vaccine among members of the Canadian Expeditionary Force during the Great War, when contrasted with the experience of the South African War of 1899-1901, will serve as an illustration. In South Africa the war last two years and seven months; 548,237 men were engaged. Among these, 59,864 cases of enteric fever occurred. This was an admission ratio of 122.9 per 1000. Among these cases there were 8248 deaths, a ratio of 18.6 per 1000. During the Great War, in a period of four years, 420,000 Canadians were engaged. Among these there were 420 cases of typhoid fever with only 14 deaths. An admission ratio of 1 per 1000 contrasted with 122; and a death ratio of 0.003 per 1000 contrasted with 18.6. Equally satisfactory results obtained in the American Expeditionary Force. In an average strength of 2,121,396 between September 1, 1917, and May 2, 1919, in the A. E. F., there were 213 deaths from typhoid fever. Had the Spanish-American War rate obtained there would have been 68,164 deaths instead of 213. Specific prevention through the use of typhoid vaccine more than any other factor was responsible for this splendid achievement.

These and other like triumphs of specific preventive medicine constitute the mighty oak which has sprung from the tiny acorn sown by Louis Pasteur at Pouilly le Fort in May, 1881.

Health Bills—The Public Health Service and the National Health Council in their bi-weekly Bulletin of January 20, list the following bills entered in the Nebraska Legislature under the head of "Health Bills":

"1. Medical Practice—H. 17, would permit duly licensed physicians of any school or system of healing, including religion, to treat patients in institutions receiving support from city, county or State."

"2. School Hygiene—H. 39, would amend the law to excuse from physical examination children whose parents object."

Movement in New Jersey to Shorten the Course of Training for Nurses—A committee of the New Jersey State Medical Society and representatives of nursing organizations of the State, after a number of conferences, have concluded to shorten the period of training for student nurses. They propose to make the shorter period more intensive by eliminating manual labor which may be performed by ward attendants.

PASTEUR'S DISCOVERY OF THE PREVENTIVE TREATMENT FOR RABIES.

By WILFRED H. KELLOGG, M. D.
(From the California State Hygienic Laboratory, Berkeley)

The discovery of the preventive treatment against rabies was the last great work of Pasteur and in some respects the greatest: not the greatest because of its economic value nor of the resulting saving of human life, but because of the mental power displayed in its development, and the far-reaching results of the work on the advancement of science. The rabies work was in logical sequence to the series of immunologic facts uncovered as a direct result of his studies of fermentation.

To appreciate the enormity of achievement represented by the studies on fermentation, the final conquering of the medieval fiction of spontaneous generation of life, the isolation and culture of the bacillus of chicken cholera, the anthrax work, et cetera, we must recall the state of human knowledge concerning the nature of disease, as it was in the seventies of the last century. At that time there was no science of bacteriology, no technique of isolation and culture of micro-organisms, no sterilizing methods, no special glassware, no stains, no culture media, no laboratories as we know them now. The nature of infectious disease was not known and the mortality from ordinary amputations in hospitals was over sixty per cent. A visit to an ambulance ward during the war of 1870 disclosed a sight of horror, described by those who have seen it, as one never to be forgotten. Velpeau, the surgeon, said "a pin prick is a door open to death." The mortality of puerperal septicemia in the Paris hospitals was as high as 30 per cent at times.

It was under conditions such as these that Pasteur perceived the analogy between infection of living tissues and fermentation of organic matter, and wrote: "It is impossible not to observe that, the further we penetrate into the experimental study of germs, the more we perceive sudden lights and clear ideas on the knowledge of the causes of the contagious diseases." And further, "Is it not permissible to believe, by analogy, that a day will come when easily applied preventive measures will arrest those scourges which suddenly desolate and terrify populations; such as the fearful disease which has recently invaded Senegal and the Valley of the Mississippi (yellow fever) and that other yet more terrible perhaps, which has ravaged the banks of the Volga." (Bubonic plague.) Microscopes of gradually improving excellence had long been used and bacteria had been observed, but it remained for Pasteur to recognize and prove the causal relation of bacteria to some of the conditions in which they were found and to recognize the great role played by bacteria in the whole scheme of nature. Considering that Pasteur was not a biologist nor even a physician, but a chemist, his accomplishment of creating the technique of a new science and utilizing it for important discoveries in that science is indeed remarkable.

It was his accidental discovery of the loss in virulence sustained by chicken cholera cultures, when allowed to age without replanting, and the immunizing property of such cultures, that led to his studies of anthrax with such brilliant results. The next step was the study of rabies, which was commenced with the idea of finding the causative organism and preparing a modified virus or vaccine as had been done for chicken cholera. He believed, that owing to the long incubation period in rabies, a vaccine would immunize bitten persons before the normal time of onset. In this he proved to be right, but attainment of the goal was delayed by his efforts to identify and isolate the parasite. All that was known about rabies at the time Pasteur commenced his studies of that disease in 1880, was its transmission by the bite of a rabid animal, the infectiousness of the saliva, the long incubation period and its uniform fatality. Experiments were first directed toward transmission of the disease by inoculation with saliva. Mad dogs were brought to him by Bourrel, an old army veterinarian, who had long been endeavoring to find a cure for rabies. Bourrel had invented a preventive measure which consisted in filing down the teeth of dogs so they could not bite.

It should be remembered that rabies was exceedingly prevalent in Europe and inspired the greatest terror; there were few partisans of the theory of imaginary rabies in those days.

In December, 1880, Pasteur visited a five-year-old child dying of rabies in the Trousseau Hospital, and secured some saliva, which inoculated into rabbits, produced death in thirty-six hours. This infection could be carried from rabbit to rabbit and while there were some who thought the rabbits died of rabies, Pasteur was more conservative and soon found that an organism was present in the blood of the rabbits, but not of rabid dogs, and that the disease could be produced by inoculating rabbits with the saliva of normal individuals. The organism was that known later as the pneumococcus and also found by Sternberg in the saliva. He made numberless attempts to produce rabies in rabbits by inoculating with saliva but the results were very uncertain and the incubation periods long. Finally as a result of increased experience in the observation of rabid dogs, he concluded that the seat of the infection was in the central nervous system. The result of this conclusion was the inoculation of animals with emulsions of brain substance, which were much more successful than the salivary inoculations, but still subject to the annoyance of long and variable incubation periods and frequent failures to infect.

If progress was to be made in the study of the virus it was necessary to make inoculation certain and the incubation period shorter. It became obvious that inoculation directly into the brain of the experimental animal should be tried but at this Pasteur hesitated; and here we get a side light on the character of the man. We see how mistaken has been the observation of the anti-vivisection fanatics who have delighted in describing him as an arch-fiend, delighting in the torture of laboratory animals. From England especially he received

numerous letters from these people who did their best to insult and harass him.

Pasteur could not bring himself to direct the trephining of the skull of a dog, although he could assist at simple operations such as subcutaneous inoculations; but even here if the animal cried he was much disturbed and overcome with compassion for it. Finally one day, in Pasteur's absence, Roux undertook the operation in which he found no difficulty. The next day, Pasteur was informed of the progress made, when he immediately expressed sympathy for the dog—saying that it was no doubt paralyzed and suffering. But when Pasteur saw him capering about the laboratory as though nothing whatever had happened, he was overjoyed, for now the experiments could go forward without delay and without compunction on account of the necessity of trephining. He always, however, insisted upon the use of chloroform for the slightest of operations in his laboratory.

Pasteur now saw the way open to a cultivation of the parasite of rabies. Not being able to isolate it, or cultivate it on artificial media, although he knew that such a parasite existed and was present in the brains of rabid animals, he conceived the idea of propagating it continuously in the brains of living rabbits. This was done and it was found that not only was the result of inoculation certain but the incubation period was constantly lessened, until after the passage through a hundred rabbits it produced death uniformly in seven days, at which point it remained fixed.

Having now a culture of uniform virulence, in a culture medium of nervous tissue instead of in boullion as in the case of anthrax, he turned his attention to a means of reducing its virulence to a point where it no longer produced the disease, but where it might still, as in anthrax, produce immunity. The method of exposure to air, having impressed itself upon his mind as being an important factor in the attenuation of virulence of cultures of anthrax and chicken cholera, it was tried with rabies by exposing pieces of rabbit medulla in jars, over caustic potash to insure a dry atmosphere. It was found that this drying gradually lessened the virulence of the material so that in fourteen days infection could no longer be produced with it. Whether Pasteur realized the extent to which fixation in the rabbit had reduced the virulence for man and the dog is not clear but there seems little doubt that such is the case. The process of exaltation of virulence for the rabbit results at the same time in a decrease of virulence for man and this is the chief protection against infection of man, when immunization with rabbit cord, by the Pasteur method or any of its modifications, is practiced.

The immunization of dogs was now commenced by inoculating them subcutaneously with small amounts of fourteen day cord, then thirteen, and so on till they received fresh virus. These dogs were found to be protected when they were bitten by rabid dogs and also when inoculated subdurally. Pasteur considered for some time the trial of the preventive treatment upon human beings but could not bring himself to the actual injection of infectious material even though proved harmless on dogs. In March, 1885, he wrote to a friend as follows: "I am demonstrating this year that dogs can be vaccinated or made refractory to rabies *after* they have been bitten by a mad dog. I have not yet dared to treat human beings after bites from rabid dogs, but the time is not far off, and I am much inclined to begin by myself—inoculating myself with rabies, and then arresting the consequences; for I am beginning to feel very sure of my results."

However, the question was soon settled for him, by the appearance at the laboratory on July 6, 1885, of a little Alsatian boy, named Joseph Meister, nine years old. The boy had been severely bitten in fourteen places, and the dog had been pronounced rabid by a veterinarian. The trip to Paris had been made by the boy and his mother on the advice of a local physician who told them that Pasteur, although not a physician, could tell them what, if anything, could be done. Pasteur was greatly disturbed as to the proper course of action. He called in his assistant, Dr. Grancher, and Vulpian, of the Academy and member of the Commission appointed to investigate the rabies work. The decision was that considering the gravity of the case and the fact that only carbolic acid and not actual cautery had been applied to the wound, the boy should have the benefit of the chance of treatment. As the inoculations grew stronger, Pasteur became more and more anxious and lost much sleep over the outcome, but finally the suspense ended, the boy remained well, returned to his home and the first application of the Pasteur preventive treatment was a matter of history.

After the treatment of a second case in October, Pasteur read his paper at the Academy, the result being as usual in such cases, an immediate division of the members into three groups; those who were enthusiastic, those who were reserved, and those who were violently skeptical and hostile.

After the publication of Pasteur's paper, people began to flock in from all sides for treatment and the clinic soon was going on an extensive scale. In 1886, four children were sent, by subscription of the New York Herald, from New York for treatment. Out of the first 350 cases treated there was only one death; that of a little girl bitten on the face thirty-seven days before commencing treatment. Then came nineteen Russians, bitten two weeks before by a mad wolf—all severely. Three of these died, which greatly encouraged opponents in France, but the general belief in the treatment was not checked.

The Academy of Sciences appointed a commission, who unanimously made the suggestion that an establishment for the preventive treatment of rabies should be created in Paris under the name of the Institut Pasteur. A subscription for this purpose was opened and was generously and enthusiastically contributed to in all parts of the world. A total of 2,586,000 francs was received, which constructed the building and provided an endowment toward the support of the institution.

The preventive treatment against rabies has been found to be an almost certain protection when

commenced within a reasonable time after the bite by a rabid animal. Under this treatment the mortality averages about half of one per cent instead of approximately 16 per cent, which is the chance of infection in untreated persons.

Little change has taken place in the method of preparing and administering the treatment since the time of Pasteur. Several modifications are in use, notably those of Hoges and Ferran, in both of which fresh rabbit cord is used in varying dilution instead of the dried cord according to Pasteur. In this country Harris has introduced a method in which the rabic material is dried in vacuo at a temperature lower than zero centigrade, pulverized and sealed in glass ampoules. This powder is mixed with sterile water and injected the same as the emulsified dried cord. The favorable results appear to be fairly uniform with all these various methods of treatment. The method that is in use at the State Hygienic Laboratory is a slight modification of the original Pasteur treatment, the principle differences being that the treatment is commenced with cord that has been dried for only six days instead of fourteen as in the original Pasteur method and the strength is rapidly increased until one-day cord is used instead of stopping at three-day cord as was done by Pasteur.

Sheppard-Towner Maternity Bill—Commenting on the reaction of the mothers of the country to the provisions of this bill, the Miami, Florida, Herald has the following to say:

"Take for example the feature of the law which provides that midwives should be permitted to attend only such women as offer every prospect of having a normal labor.

"This, as Senator Reed points out, would require a physical examination of the women. In other words, every time there is to be a birth in this enormous country a public official would come into the house, whether you wanted him or not, to tell you if you needed a midwife or a specialist. The following procedure is then suggested: 'After a reputable physician or authorized examiner had certified that birth would very likely be a normal one, this could be further checked by the health department providing suitable blanks for the purpose and that they must be returned when the birth certificate is filed. Furthermore, the midwives should be required by law, even in the cases, which have been certified as presumably normal, to call a physician whenever labor lasts more than twenty-four hours or any abnormality develops. Such a procedure would have a very highly educative effect upon the patients, especially upon the foreign born.' And this is Senator Reed's comment, as printed in the Congressional Record: 'Yes, Mr. President, it will have a highly educative effect. It will teach our people to hate the government that invades their homes, that thrusts the ugly face of a politician, who tramped in Washington to get a job, into the sacred chamber of the woman about to give birth to a child.' Ah, did the women who so piously followed the lead of the cure-all reformers think of that? To quote Senator Reed again: 'To carry out this plan there must be created a vast army of officials, spies, snoopers, tattletales, informers and meddlers. According to the opinion of these reformers and theorists, no housewife can properly cook a meal unless instructed by them. Mothers are incapable of bearing children properly unless they have had at least a few lessons from women who have never given birth to a child.' Here is a new light on our dear paternalistic maternalistic legislation."

DRY BRAIN VERSUS WET BRAIN *

By CECIL E. REYNOLDS, M. D., Los Angeles

Many years ago a veteran officer of the Civil War propounded to me a question. He said, "Why is it that men, shot in the head, so often bury the wounded side in the ground." He also added that this action, to his way of thinking the worst possible thing to do, was so constant that it puzzled him. I was not at the time prepared with an answer, but I believe the answer can be supplied by observing a large number of patients with operative wounds near the vertex as well as patients with non-traumatic parietal lesions. These patients are frequently more comfortable and, under certain circumstances, instinctively seek to lie upon the "operated" side or upon the side of the lesion.

In the case of the soldiers referred to, if the observation was correct, Nature's purposes presumably were to wash away foreign matter as far as possible with the excess fluid she provides, and to float the brain upwards and prevent contact and adhesions to the injured portion of the cranium, for as a matter of fact, in spite of the weight of the brain, fluid collects at the most dependent parts.

If the hole in the dura mater is not shut off by adhesions from the osmotic arachnoid within a reasonable time, the patient will die from leakage of cerebro-spinal fluid, hence nature steps in once again and, if the patient is at all conscious, a dangerous loss of fluid is heralded by extreme restlessness and an uncontrollable impulse to raise the head, in part, possibly, on account of dyspnoea. This is a constant observation. Accompanying this impulse to rise is an abnormal elevation of temperature, a rapid shallow respiration with air-hunger, dilated pupils and an expression of terror. Assuming the semi-conscious individual has succeeded in propping himself up, and his life has been saved temporarily by a fresh supply of fluid from his choroid plexus finding its way into the fourth ventricle and the external opening has been closed by adhesions, his condition, apart from hemorrhage and sepsis, is now likely to improve for some hours. However, after a variable time, usually from eight to twelve hours, the draining of his diminished fluid down from the cerebral cortex to the base in addition to what has already seeped into the scalp will induce a condition of "dry brain," which is heralded by precisely similar symptoms of rapid dyspnoea, fever, etc., as occurred when the leakage was external, and, in addition severe convulsions will certainly appear.

These fits will naturally tend to disconnect the patient from his support and to enforce a recumbent posture once again.

Moreover, these fits are at first strongly Jacksonian so that, if the wound is in the left parietal region, the head and eyes will go to the right and the right arm and leg will be convulsed, and this tends to again bring the wounded side downwards

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* Paper read before the fifty-first convention of the Medical Society of the State of California, Yosemite Valley, May 17, 1922.

against the ground. Especially is this the case when consciousness is at all retained, as it often is at first, for, the head being forcibly turned to the right, the patient will lie on the left side in order to get air. Thus is more protective fluid supplied to the wounded cortex.

Hence, it is seen that nature has provided certain coarse integrative mechanisms to adjust the hydrostatic necessities of the organism in head injury as well as the circulatory, and leaves to other biological protective mechanisms the bacteriological problems.

The above mechanisms I have been able to study most vividly in the forty or more cases of chronic external hydrocephalus upon which I have operated, because in these cases the fluid and brain volume stand in unstable relation to each other and often the fluid is straining to escape in a manner that does not obtain to anything like the same degree in other conditions. Moreover, the surgical cure depends upon leaving the dura mater open in a variable number of places. Hence, it will readily be appreciated that the changes from wet brain to dry brain and vice versa in these cases bear a similar relation to other cerebral surgery as does the ordinary motion picture to those presented by the ultra-rapid camera.

In other words, in external hydrocephalus there exist all the complications due to changes in fluid pressure and level crowded upon the patient in a few hours with kaleidoscopic vividness.

The first rule to observe, therefore, is that of gradual reduction of pressure. The dura must never be opened more than a pin-prick or two during the first operation either above or below the tentorium.

During operations at the vertex the head should be raised nearly 45 degrees which obviously limits the leakage of fluid, and if the blood pressure sinks too low before the dura is opened, it can be restored by lowering the head; thus, a safety margin is provided and a warning issued against opening the dura at this stage.

After the dura has been opened even a little in these cases, lowering the head during operation becomes experimental with the odds against the patient.

Likewise in the suboccipital operation, it is well to commence with the head raised 30 degrees, so that the warning given by the blood pressure is in ample time instead of in marginal time, and even during the second stage of this operation, below the tentorium, it is better to keep the head slightly raised as long as the blood pressure is good. This conserves the fluid in the spinal theca and does not make much difference to the amount lost from the ventricles unless the iter of Sylvius is dilated.

In such cases I take the precaution of having the deep silk muscle sutures in place before opening the dura, so that they can be rapidly drawn tight and limit the leakage. The skin must also be accurately closed.

Since no external drains are used in the suboccipital operation, the patient can be placed in bed with the head low if necessary, but it is better slightly raised if the general condition is good, because in one epileptic infant with advanced external hydrocephalus, the only few drops of blood that did ooze from the muscles wandered upward and formed a firm clot in the iter of Sylvius, owing to the head being kept low for forty-eight hours.

This is the only instance of the kind I have known, however, and I do not hesitate to raise the foot of the bed after a suboccipital operation or a radical fourth ventricle operation if there is the least shock. Most cases are better on one pillow.

At the vertex things are much more complicated, especially where there is a large osteoplastic flap. It is vitally necessary that no blood should congeal upon the arachnoid or pia, and therefore some thin, flat rubber drains are necessary after both stages.

This is a straightforward affair after stage one, when the drains can remain in for thirty-six hours, but after stage two, when the dura is open, it means that the surgeon has practically to stay at the bedside until those drains are out.

This statement is true of all cases in which there is a breach of dura, but it is greatly magnified in cases of external hydrocephalus.

If signs of loss of fluid appear, such as rapid shallow respiration, undue rise of temperature, restless anxiety, frequent pulse, and dilating pupils, the drains should come out, blood or no blood.

Otherwise, the drains stay in until the color on the dressing shows that such blood as has oozed from the diploe is thoroughly laked by cerebrospinal fluid and is uncoagulable—usually about twenty-four hours or less.

During this time adults will often stand a fairly low position of the head which favors complete cleansing, but hydrocephalic children seldom can be lowered.

After the drains are out, the slits in the scalp quickly seal up, especially if the head is raised, and when this is complete it is safer to keep the head fairly low and on the "operated" side. This allows a flood of oedema to separate the inflamed surfaces.

However, this protective mechanism can go too far, and when this is the case marked hebetude and some paresis is observed, with slow, deep, sighing respiration, and later on mild convulsions, usually Jacksonian in type, will occur. These will certainly occur if there is the least renal insufficiency, for then the stagnant fluid at the site of operation becomes loaded with urea and acetone. Doctors Brem, Zeiler and Hammack have found 29 mgms. per cubic centimeter of cerebrospinal fluid in one of my cases. The convulsions in such a case are the result of toxicity and pressure, combined.

When these signs of wet brain are recognized, the head will naturally be raised, and if a renal condition is threatening, dermatoclysis and hot packs are added to the therapy. All cases are given as much water by mouth and glucose and

sodium bicarbonate solution by rectum as can be retained, and hexamethylenamine before and after operation, unless contra-indicated.

If no renal insufficiency is present, raising the head is followed by a rapid subsidence of wet brain symptoms, excepting only the paresis, which may persist for a few days. Should the fits persist, the differential diagnosis between uraemia, acute swelling, and secondary hemorrhage will have to be instantly made. Lumbar puncture may be cautiously used in acute swelling. Fortunately, these complications are rare in properly selected cases, and as a rule the condition will be highly satisfactory for about twelve hours after the head is raised.

Then, often but not always, a condition of secondary dry brain sets in if the patient has been kept longer on a back-rest. The fluid has not only passed down to the basal cisterns, but out around the edges of the bone flap into the lymphatics of the scalp, and the rise in rate of respiration is the great important fact to be reported by the nurse. With it is an undue rise of temperature and a widening of the palpebral fissures and of the pupils.

If this condition is not recognized and the head immediately lowered on to the "operated" side, the surgeon will be greeted with the worst possible picture of Jacksonian epilepsy, passing into status with capillary hemorrhage. Should such a calamity take a surgeon unawares, the patient can probably be saved by immediately opening up the flap, washing out, closing completely, and keeping the head low for several days. It is evident, therefore, that dry brain is a more serious and urgent complication than wet brain. Headache may be complained of in either wet or dry brain. I suspect that many cases of reported hyperpyrexia have been due to dry brain. Early dry brain fits should be controlled with light chloroform narcosis until the brain is wet again, provided there is no uraemia or marked acetonaemia. After the third post-operative day no anxiety need be felt on account of either wet or dry brain. The assistance that is gained by familiarity with the above principles is well illustrated by the following case.

A married woman, age 33, suffered an injury to the head in an automobile accident three years ago. Although there was said to be no fracture of the skull, she thereafter suffered intense periodical shooting headache in the right parietal region. Eight months ago, after an unusually severe headache, sudden coma and paralysis supervened and it was clearly a classical case of apoplexy, possibly due to rupture of a traumatic aneurysm or adhesions.

When I was called to the case twenty hours later she appeared moribund, but there were some indications that the left side was more profoundly paralyzed and the right pupil was more dilated—both pupils fixed.

I performed a right subtemporal decompression and fluid blood came out in scant amount when the dura was opened. Accordingly, I turned up a large osteoplastic flap over the right Rolandic area, and upon opening the dura a firm clot was seen to be spread over the entire hemisphere beneath the arachnoid, certainly, and, as far as could be determined, beneath the pia as well.

This was so intimate with the grey matter that its removal was out of the question. I, therefore, opened one of the pial veins to see if the blood in the vessels was fluid and, finding this to be the case, the dura was left unstitched as usual, the flap replaced, and a thin unstuffed rubber-tissue drain brought out through the temporal muscle.

She was placed in bed with the foot so elevated that the head was very low and abundant liquids provided per rectum, etc.

The drain remained in for two days without dangerous loss of fluid; in fact, the fluid evidently came through the bloody arachnoid with difficulty. When almost clear cerebrospinal fluid was seen on the dressing and oozing from the wound, the drain was removed. She was kept with the head low for several weeks. During the second week she had violent and continuous Jacksonian fits affecting chiefly the head and eyes to the left and the jaw and tongue to the left. These fits became less violent and frequent after seven days and she now has diminishing fits about once in two weeks or a month, and is in perfect condition mentally and physically. No trace remains of the hemiplegia which persisted some weeks after restoration of consciousness. Nature washed away a clot in record time that no surgeon could afford to meddle with. The pupils are now equal in size and reaction.

This indicates the application of the above principles to the post-operative treatment of spontaneous cortical hemorrhage.

The same thing applies in non-operative cortical hemorrhage, into which group some will fall on account of age and blood pressure.

As soon as it is judged that the bleeding has ceased and the symptoms are no longer progressive, it is better to ensure a liberal flow of cerebrospinal fluid to the clot before it hardens and sets, and in order to obtain fresh relays of fluid a system of four hours down upon the hemorrhagic side and two hours upon a back-rest to allow absorption alternately for several days would flush the damaged cortex most satisfactorily.

The possibility of secondary venous thrombosis from pressure, however, must be also considered.

Again, in traumatic cases insufficient to cause hemorrhage, nature protests the violence done to the skull, by pouring out an extra volume of protective fluid immediately beneath the site of applied violence. Unfortunately, this fluid often becomes locked up by surrounding adhesions, producing the familiar arachnoid cyst responsible for so many mental and epileptic syndromes, and necessitating later operation.

Placing the patient low upon the assaulted side tends to generalize the fluid, and raising the head for two hours out of every eight will avoid in such cases the excessive wet brain symptoms.

I accidentally discovered a high degree of wet brain in a case of encephalitis lethargica. Before I had learned the art of ventriculography, I exposed by osteoplastic flap a large area of cerebrum

in a woman who had remained deeply comatose for about three weeks with optic neuritis and some focal signs suggestive of tumor. Everything was water-logged and lumbar puncture also revealed excessive fluid under pressure. She made a perfect recovery, excepting only some pains in the limbs for six months, suggestive of a thalamic disturbance. There were no other sequelae.

Since the prognosis in such cases is so poor, this experience would suggest that the brain may suffer from prolonged contact with stagnant toxic fluid. Repeated lumbar puncture followed by dermatoclysis and a lowered head would be most likely to wash the brain clean. Again, I would suggest eight hours down and two hours up. Hexamethylenamine would also be indicated.

This last deduction is more theoretical, as my experience of encephalitis lethargica is very limited in comparison with that of several members present at this meeting, but my intention is to arouse further attention to the importance of the purely mechanical factors relating to the degree of wetness or dryness of the surface of the cerebrum and to show that, beyond certain limits, it is a vital matter. Such as they are, these remarks are based on over two hundred operations upon patients ranging in age from four days to sixty-eight years.

It may be added that these complications are less likely to give trouble in extensive resection of lobes of the brain than in extensive exposure of surfaces of brain, in my experience.

In regard to acute brain injuries, repeated lumbar puncture has been often and strongly advocated, but in the papers I have seen no account has been taken of the danger of making the extravasated blood too dry, good as the method is in other respects. In every attempt to aid nature there is a possibility of upsetting her best laid plans.

As stated above, the dura mater is left open in the operations for chronic external hydrocephalus for reasons that are sufficiently evident; but it is not so obvious why the same procedure is necessary in all other cases of epilepsy which have been selected for operation, such as vertical meningitis and internal hydrocephalus in some instances, even after a satisfactory fourth ventricle operation.

It would seem that a procedure which requires such assiduous post-operative care should have further support than empirical success only. Dr. Edward Franklin has searched the literature assiduously and informs me that, in his opinion, the neuroglia is a medium of nutritional exchange for the neurons, becomes hypernutritive in epilepsy, and after repeated fits becomes hypertrophied and increased in quantity, and finally degenerates into non-nutritive tissue, fibrous in character. This would account for the resistance of all long-standing cases to medical treatment, and the comparatively high percentage of complete and partial recoveries which have been obtained by leaving large flaps of dura wide open over both cerebral and cerebellar hemispheres, as well as by simple decompression exceptionally. It also accounts for the slight persisting fulness of the subtemporal observation window in some cases in whom an internal hydrocephalus has been corrected.

DISCUSSION

In reply to Dr. Milton Lennon: The wet brains seen have presented arteriolic contraction and in some instances venous congestion has been evident. On the rare occasions where inspection has been inevitable on account of dry brain, there has been intense hyperemia and injection, only seen, however, after many fits. Thus fits due to the irritation of either dry brain or concentrated toxaemia tend to become continuous and pass into status, and are not as periodic as are fits due to arteriospasm, such as occurs in most forms of epilepsy, in my belief.

THE NECESSITY FOR MORE ACCURATE DATA IN THE SURGEON'S PERMANENT DISABILITY REPORT*

By F. E. RAYNES, San Francisco

SUMMARY

1. Attention invited to letter of instructions from Industrial Accident Commission.

2. Necessity for uniformity.

3. Necessity for full and accurate measurements for lost function.

4. Necessity for accurate record of occupation when hurt, age, and wages.

5. Permanent disability rating is not applicable while improvement in function can be obtained by treatment.

It has been the endeavor of the Permanent Disability Rating Department of the Industrial Accident Commission for some time past to enlist the co-operation of surgeons who do industrial work, and secure more accurate reports of the disability existing at the time of final report. Results have been very satisfactory among the surgeons doing a large bulk of the work in San Francisco. We have been able to get in personal touch with them and explain our needs and the difficulties encountered by us.

This department recently sent out a form-letter to the surgeons, explaining briefly the needs and the methods adopted by us in determining loss of function in different disabilities, so that it is unnecessary to take up time in repetition.

Our aim and endeavor is to rate the injured man on the actual disability presented; no more, no less. It is for this reason that we earnestly solicit the co-operation of the attending surgeon to aid us in arriving at a correct conclusion. It can readily be understood that the surgeon attending a given case from its inception is in a position to throw light on many conditions that it would be difficult for us to ascertain by seeing the case, say once or twice.

Often, a man comes to this department complaining of many vague and apparently disabling symptoms which it is difficult for us to correlate to his injury. It is the attending surgeon, in many of these cases, who can help us separate the wheat from the chaff.

* Read before the Section on Industrial Medicine, Medical Society of California, Yosemite National Park, May 16, 1922.

There are some individuals who, when they know that their case is up for a rating, are prone to put their worst foot forward and exaggerate all of their symptoms. At times they add others which do not exist, or which have no relation to their injury. In many instances it has been necessary for us to recall these individuals for numerous examinations before reaching a final conclusion.

On the other hand, cases have called at this department with severe disabilities, which have been covered by the surgeon's report in such a general way as to make it difficult to make a correct rating, and in many instances a grave injustice would be done the injured man if the case were rated only on the information furnished by the attending surgeon. This lack of information on the part of the surgeon is not intention on his part to avoid giving complete data, but is, we are sure, due to the fact that the average surgeon is unfamiliar with the methods employed in arriving at a rating. A brief study of the rating schedule of the Industrial Accident Commission will show the many difficulties encountered when inadequate information is furnished.

The factors to be considered are:

1. The nature of the injury or disfigurement. In Table I of the schedule, each injury, as far as is possible to classify same, is given a disability number and a line number.
2. The occupation of the injured person. In Table II, first division, each occupation is classified and given a form number. In Table II, second division, the case is placed in the proper table for rating, according to the disability number and form number. These tables run from letters A to Q, and are read according to the line number and age; the proper point giving the percentage of disability, which represents four weeks' compensation for each 1 per cent found.
3. The age of the injured person. This it is necessary to know before a rating can be made.
4. The average weekly wage of the injured person.

The foregoing does not present all the features of the schedule, but they would take too much time to discuss.

In single disabilities, such as straight amputations, the rating is a comparatively simple matter. When there are combinations of disabilities, such as amputations, deformities, ankylosis or stiffness of various joints, loss of power or nerve lesion, the rating becomes a much more complicated matter; hence, the necessity for accurate data and measurements.

The lack of adequate information makes the rating of certain cases particularly difficult when the surgeon and the injured person are at points a considerable distance from San Francisco, and on occasions it has been necessary for the injured man to make the trip to the Commission before his disability could be determined. This we wish to avoid if possible, as it often involves considerable personal expense to the man.

In talking with a number of surgeons who have adopted the method of taking proper measurements of loss of function and making accurate data, we are told that it is not only an advantage in making their final report, but is also valuable in noting the amount of progress, particularly where physiotherapy or work treatment has been employed.

Our idea has been the adoption of simple, uniform methods of examination, not involving the use of elaborate, expensive apparatus. More information can be given in fewer words and our reports are more readily understood.

In the past, there was a very noticeable number of cases sent to this department for ratings where there were marked temporary disabilities aside from the positively known disabilities. This was particularly so in hand injuries, where amputation of fingers or portions of fingers, or other injuries had occurred. Many of these cases presented considerable stiffness, loss of flexion and power in the remaining parts of the hand, for which, in many instances, no treatment had been given. If such a case is rated by this department, the rating is necessarily made on the findings at the time the case is presented.

It has been our policy to withhold ratings in these cases, with the suggestion that the man be given physiotherapy or other treatment. The result in many such cases has been highly satisfactory where treatment has been given. Not only has there been a marked saving to the insurance carrier, but the man, in many instances, has been restored to much of his former usefulness as a worker. This, to our minds, is much more important than the added compensation he would have drawn had he been rated on the original findings.

During the past year there has been a noticeable decrease in cases presented to this department before the permanent stage has been reached, particularly in San Francisco and vicinity, and we believe that there is a much better appreciation of the advantages to all parties concerned.

In passing, we would again like to call attention to the statute of limitations, which runs against the injured man's claim six months after the last medical treatment or last payment of compensation. The man's application for rating and the surgeon's permanent disability report must be in the permanent disability rating department of the Industrial Accident Commission before the expiration of that time, if the injured man is not to be deprived of his rights under the law.

In asking co-operation in these matters, we will also say that any suggestions that will improve our methods will be only too gladly received.

Your attention is invited to an illustrated article by H. L. Langnecker which appeared in the December, 1921, number of the California State Medical Journal, and the circular letter from the permanent disability rating office of the Industrial Accident Commission dated December 7, 1921.

Woodmen of the World Erect Tuberculosis Sanitarium at San Angelo, Texas—This fraternal organization, with a membership of some 800,000 has started construction of a large, very modern tuberculosis sanitarium in Texas. This is to be the first of four institutions of this kind located in different parts of the country.

THE ALIENIST AND EXPERT TESTIMONY*

By EDWARD HUNTINGTON WILLIAMS, M. D.,
Los Angeles

The lack of understanding by the general public about insanity increases the problem of the alienist. To be sure, this ignorance is no greater than about most other obscure diseases. There is this difference, the average man appreciates somewhat his ignorance about diseases in general, but not so as regards insanity. Most persons believe they "can tell a crazy man when they see one"; whereas, in point of fact, their train of reasoning about mental sickness is almost as illogical as that of the patient about other matters. For example, it is generally believed that insane persons possess unusually crafty intelligence. Yet, paradoxically, any sign of intelligence on the part of an accused criminal at the time of his trial is regarded as evidence of mental soundness by many laymen.

Little wonder, then, that trial by jury to determine an individual's mental status is likely to be "something of a joke." Indeed, the results of our archaic method of permitting lay juries to pass judgment on questions of insanity is often a travesty of justice.

A few months ago the peculiar behavior of a certain criminal in the Los Angeles County Jail suggested the probability that he was insane. He was, therefore, sent to the psychopathic ward for observation and in due course came before the insanity commission and was pronounced insane.

The prisoner himself did not accept this verdict, however. Like most insane persons, he believed himself to be mentally sound, and demanded a jury trial. And as this demand cannot be denied in such cases in California, regardless of the findings of the lunacy board, this man was brought to trial before a jury in another court for the purpose of determining his mental condition.

At this trial a number of disinterested observers, as well as the members of the lunacy commission, testified that the man was insane. There was practically no evidence to the contrary presented, except the reiterations of the patient himself. Yet the jury promptly pronounced the man sane, and he was held for trial on the criminal charge.

At this second trial his guilt was proven conclusively and he was duly convicted. But the peculiar indifference of the man during the trial and something in his actions, together with the fact that the lunacy commission had judged him insane previously, led the court officials to believe that the prisoner belonged in an asylum rather than a prison. So he was again placed on trial to determine his sanity.

Again the same witnesses who had testified at his previous insanity trial gave the same testimony about his abnormal mental condition. But with a very different result. For this third jury declared the man insane.

Thus by the circuitous route of passing through four different courts in three separate trials, this insane man finally arrrived at precisely the same goal that was suggested by the lunacy commission originally. The total expense involved in this original insanity trial was about twenty-five dollars. The expense of the three intervening trials totaled several hundred dollars.

Another case that came before the court of Los Angeles County shortly after this one, was that of a man accused of a minor crime. In this case, as in the other, the lunacy commission pronounced the man insane, and the patient at once demanded a jury trial. At this trial six physicians testified to the man's insanity, four of these physicians being men specially trained in observing mental cases. Indeed, the only witness for the defense was the wife of the prisoner, who stated the hesitating belief that her husband was not insane. None of the doctors in this case received any remuneration, or expected to, so that there could be no question as to the sincerity of their belief. Yet in the face of this overwhelming testimony, the jury promptly decided that the man was not insane. He was therefore brought to trial on the criminal charge, convicted, and sent to prison. But after a few weeks of prison life he showed such unmistakable signs of insanity that he was transferred to a State hospital for the insane, and is still an inmate of that institution.

The number of similar cases that could be cited, confining our observations merely to our own courts, would fill volumes. Indeed, they do fill volume after volume of our court records, and represent thousands upon thousands of dollars in expenditures that might easily be avoided by a simple and wholly reasonable change in our process of legislation. And apparently this is fully appreciated by every one connected with the administration of the law; yet nothing definite is done about it. In fact, this curious credulity and ignorance about insanity is frequently taken advantage of by lawyers to pervert justice, as illustrated in the following case:

A certain woman client of a reputable attorney conceived the idea that he had defrauded her. And since she could not convince the authorities that such was the case, she took the matter into her own hands in characteristic paranoid fashion, by discharging a revolver. This landed her in the psycopathic ward, where she was pronounced insane by the insanity commission. But, true to form, she demanded a jury trial.

The new attorney she employed, being wise to the ways of juries, and having had considerable experience with insanity cases, was not fully convinced of the woman's mental soundness, and therefore consulted an alienist. Curiously enough, this alienist, although highly trained in his specialty, still retained a modicum of common sense—a thing that all specialists are popularly believed to

* Read before the Section on Neuropsychiatry of the Medical Society of California, May 17, 1922.

lose in the process of acquiring their knowledge. He assured the attorney that his client was insane.

"But," said the alienist, "you will have no difficulty in winning your case. Regardless of what the lunacy commission and the judge may have thought or may think, the jury will be guided in its opinion by the appearance and actions of the woman herself. Put her on the witness stand and let her talk as much as she pleases and rest assured that the jury will call her sane."

That was precisely what the attorney did. And despite the fact that the physicians of the lunacy commission testified that the woman was insane, and in addition, two judges of the superior court who were placed on the witness stand expressed the same opinion, the jury declared her mentally sound and she was given her liberty—a menace to her community and to herself.

It has been asserted repeatedly that "important murder trials are conducted by the newspapers." Technically this statement is untrue, of course. But it is true that newspaper representatives search out evidence, and express opinions, play up every incident, put on special writers, and make capital and copy for the benefit of the maudlin and morbid.

Furthermore, some newspapers make their own diagnosis of the accused person's mental condition regardless of medical evidence, and naturally this colors the text of the matter they print. Whether intentionally or otherwise, they become partisans.

Since the opinions of most persons, including jurors, are based upon newspaper statements, this influence cannot fail to insinuate itself into the jury rooms. Thus in a measure, at least, criminal cases are influenced by a partisan press.

An evening newspaper in Los Angeles, during a notorious murder trial, printed an editorial which began with this statement:

"The rapidity with which the defense of insanity is undermining the administration of American law suggests a lack at least of moral responsibility on the part of persons other than those under indictment for crime." The implication of the paragraph and, indeed, the entire editorial, is that the plea of insanity is simply a "dodge" to defeat the ends of justice.

It so happened that on the very day upon which this editorial appeared, a certain American officer, bearing the congressional medal for bravery, and famous for the terse retort given in answer to a German demand to surrender, disappeared from a ship at sea. This man, to the casual observation of his immediate friends at least, had shown nothing that would indicate a tendency toward mental aberration. And yet it now appears that he deliberately planned and accomplished self-destruction. There seems to be only one explanation—mental unbalance. And, now that the deed is done, the lay world is ready to accept such an explanation, and shake its pious head dolefully over the misfortune.

But supposing this same "mysterious malady" had manifested itself in the case of this brave American officer as a homicidal instead of a suicidal impulse?—a thing quite consistent with insanity. Then, instead of sorrowful and sympathetic comment, we should have the usual torrent of newspaper condemnation and malediction against the man and the deed, and against any alienist who ventured to explain the act on the ground of insanity.

Or had any one suggested, even a few days before the tragedy, that there was anything abnormal about this man's mentality, the newspapers would have fairly oozed recriminations. Yet I venture to think that any trained alienist would have detected some signs of mental instability.

The existing method of taking medical evidence in murder cases where the sanity of the accused is in question is unscientific and partisan, and tends to discredit the medical profession. Also this method frequently fails properly to serve the ends of justice.

At present the medical experts are employed either by the prosecution or the defense, thus in the very beginning tending to make the whole procedure from the examination of the patient to testimony before the jury, a partisan affair rather than an impartial, scientific attempt to arrive at a correct diagnosis.

The physician finds it difficult when making his examination to obtain the actual facts about the history of the patient, or his heredity, as at present he is furnished only such items as partisan representatives of the law choose to give him. As a result, he is likely to reach erroneous conclusions, although they may be honest ones and entirely justified by the evidence presented.

Wherefore, the statement of the expert witness before the court represents a biased opinion. And this opinion is still further distorted by the cross-examination which does not attempt to bring out actual facts, but is simply a system of cross-heckling in which the wits, partisanship and integrity of the physician are at stake, rather than his actual opinion about the patient or his qualification for giving such an opinion. In short, the procedure is not an honest attempt to determine the physician's opinion, but simply an attempt to discredit it.

It follows naturally that under present conditions the alienist is likely to be suspected of mercenary motives in giving his testimony. And this cannot fail to have a certain influence upon the jury.

The sole function of the physician is to determine whether or not the accused is suffering from disease. He is not concerned with the question of guilt or punishment. But the practical effect of existing methods is to force the physician to share the legal responsibility as to the punishment of the defendant.

Another deplorable thing is the lack of any standard of qualification in the matter of expert witnesses in insanity cases. In effect the law does not regard insanity as a disease in the same sense as it does other pathological conditions. For example, in the case of such relatively easily diagnosed diseases as pneumonia, syphilis, tuberculosis, or malaria, the positive opinion of one physician outweighs the contrary opinion of any number of lay observers. In such cases, the statement of the

village cobbler, blacksmith, carpenter, or constable, that they did not believe a certain person had tuberculosis or syphilis, would have no weight as evidence against the positive statement to the contrary by a competent physician.

Such is not the case in deciding the much more difficult problem about the obscure disease, insanity. In such cases any person may express his opinion and the very bulk of testimony often carries great weight with the jury.

No one will question that our present methods of conducting trials in which the sanity of the defendant is in question are archaic. And yet the remedy is a simple one, easily applied. This remedy has been suggested repeatedly by legal, medical and lay organizations and, with minor modifications, is regarded as the sensible, logical thing to do the country over. In effect it is this: In cases of suspected insanity, criminal or otherwise, the actual condition of the patient is to be determined, not by a jury of laymen, but by a commission of trained observers who are competent to judge in such matters and who are appointed by a judge to determine the one point as to whether or not the patient is insane. The physicians would receive the same remuneration, whatever their decision, so there could be no question about their opinions being influenced by a monetary consideration.

Apparently there is no question that some such arrangement would be more just, and would serve the ends of justice better, than the present system of deciding these matters through the medium of lay juries. And yet, in certain states where repeated attempts have been made to put some such law into effect, it has never been possible to carry it out.

Why? There seem to be four very explicit reasons why such a law always gets clogged and sidetracked in the legislative machinery and fails to get through. These four reasons are as follows:

1. The opposition of certain influential criminal lawyers who would be deprived of an opportunity to show their skill and oratory if such a law were passed;

2. The sensational physician, who is in effect a professional witness, and who would lose the glamour and publicity of a court trial if his statements were confined to an unobtrusive report, confided to a judge;

3. A certain class of judges in the criminal courts who glory in the publicity given by the newspapers in public trials; and

4. The general indifference of the public at large to anything that concerns insanity, except on those sporadic occasions when insanity is the defense in some notorious trial.

These influences, strange as it may seem to the ordinary observer, have been sufficient to defeat the necessary legislative action. And the outlook for the future seems just as uncertain now as it was thirty or forty years ago when these matters were first proposed and accepted by the majority of intelligent thinkers.

GONORRHEA IN WOMEN*

By GEORGE K. HERZOG, M. D., San Francisco

The object of this paper is to re-emphasize the most neglected of all gynecological conditions. Gonorrhea is the fundamental cause of much misery and suffering, loss of time on the part of the patient, sterility, and blindness of the newborn.

Chalfant (Jour. A. M. A., June 3, 1922) discusses some gynecological misdemeanors. Perhaps he considered the neglect of gonorrhea a felony and thus eliminated it from his misdemeanors. Too often pus tubes are removed and a gonococcic pus discharging urethra left untreated. Can it be that some surgeons, in their enthusiasm to remove the pathologic tubes, overlook the importance of the urethritis and allow the patient to continue on her journey, infecting others and spreading the disease?

A woman suffering from smallpox or diphtheria is isolated; but with a gonorrheal discharge she is allowed to remain free to spread infection.

The woman practicing prostitution constitutes an endless chain of infection against which little or no attempt is made to protect the public. A mistaken chivalry shields the woman in most instances and a corrupt or indifferent political condition fails in the discharge of an important duty.

Physicians have made many advances in the prevention and cure of disease, but progress in treating gonorrheal conditions is at a standstill. The general treatment is practically the same as it was fifty years ago. The germicides of that period are still used, and the failure of that period still exists. Occasionally a new drug, such as mercurachrome or acriflavine, is put forward, but after an honest trial, it falls into the same category as silver nitrate, sulphate of zinc, bichloride of mercury, and potassium permanganate. Slow progress in treating gonorrhea in women is in part due to the fact that the profession rarely sees the patient in the acute stage.

The man with a slight urethral discharge usually consults a physician immediately, but the woman seldom comes under our observation until the disease has spread to the cervix, the body of the uterus, and sometimes the tubes. A slight urethral discharge with burning on micturition does not worry the female, while the male considers these symptoms worthy of medical attention.

The patients seen in both private and in clinical practice are usually the advanced cases with the glands of Bartholin, Skene's glands, the cervix, and often the tubes involved. It is in these cases that a felony is committed by some surgeons in removing the interabdominal condition and leaving the disease in the vulvo-vaginal tract. To cure the patient, the glands of Bartholin should always be excised, Skene's glands should be opened and cauterized, not with drugs, but with the thermocautery, and the urethra should be injected with a strong silver nitrate solution. The cervix should

* Read before the San Francisco County Medical Society, August, 1922.

be dilated and here again the cautery liberally applied.

Under this treatment the patient is cured and the source of infection has been removed. This technique has been recommended for some time and prevails in some larger clinics, but is often neglected by many physicians. The average woman suffering from gonorrhea is given the usual washes and is irrigated perhaps a few times at the office by the physician. The patient tires quickly of this treatment and discontinues it until the abdominal symptoms drive her to the surgeon. The knife and cautery applied as I have directed would often avoid the necessity of abdominal surgery.

The principal objection raised against cauterizing the cervix is the destroying of the endocervical glands with consequent sterility, but usually the woman is already sterile, for the tubes are infected and occluded. Another objection to the cauterizing of the cervix is that a stricture with menstrual disturbances or obstetric obstruction may result. This is only problematical. I have never seen such a result. Even in those cases where the disease has not reached the fallopian tubes, I think it is better to remove the cause and not worry about the probable effect. Objection has also been raised against the cicatrix that occasionally remains about the cervix after the cautery, thus increasing the danger of malignancy. However, until more definite proof is produced, this objection should not be considered.

It is only too often that the physician fails to diagnose gonorrhea because he does not find the gonococcus. The fault lies usually with him and not with the laboratory technician. It is necessary usually to milk the urethra, not gently, but with considerable pressure. The pus should be expressed from Skene's glands. The surgeon likewise should locate the glands of Bartholin and again utilize force to obtain the pus. The cervix should be very carefully wiped off and it should be sponged with sterile water a half dozen times, and then when massaged the discharge should be collected on a slide and examined. Several slides should be made on different days before the diagnosis is definitely established.

Leucorrhea is very often of gonorrheal origin, and should be so considered where the patient has had marital relations, until proved otherwise. Particularly does this hold true in the young woman. One can safely say that an abscess of the gland of Bartholin is always gonorrheal, and a urethral discharge is of the same origin until proved otherwise.

Urethral caruncle, of gonococcic origin, is often seen in improperly or inadequately treated patients. I have had unusual success with the use of Skene's urethroscope and the high-frequency spark in relieving this condition. This treatment may be carried out in the office under local anesthesia.

Peri-urethral abscess in the female following gonorrhea is a troublesome and unsatisfactory condition, particularly when the abscess is so close to the internal sphincter that urine may be mixed with the pus.

Internal urethrotomy does not relieve this condition, while external urethrotomy is very apt to leave the patient with a difficult and troublesome urethro-vaginal fistula. These conditions may be treated with silver nitrate applications and massage. The massage is the greatest help, but in some patients surgery becomes necessary.

Young women in particular are prone to neglect to call on the physician until the pelvic organs are involved and surgical interference is required.

I have not dwelt upon the subject of pelvic complications following gonorrhea of vulvo-vaginal tract as the therapy here is more definite. Acute salpingitis requires rest and ice-bag; old pus tubes should be removed; pelvic abscesses opened and drained; while a general peritonitis should be treated as that of any other origin.

In conclusion, I wish to say that the radical treatment of gonorrheal vulvo-vaginitis, namely, the excision of the Bartholin glands and the direct application of the cautery to the urethra and cervix have given most gratifying results.

Social Service Investigators—None but reactionaries will deny the necessity for many of the existing social agencies dedicated to the prevention and mitigation of sociological problems that seem to multiply with the advancing years. Those who think far enough ahead, however, may sense certain dangers in connection with social relief that may approach the border-line of paternalism and lead far afield from the old-fashioned virtues of self-reliance and independence. It is at once apparent that most of the problems referred to have a close connection with health and sickness.

In recent years most hospitals, many dispensaries and a great majority of civic or social agencies offering free medical or surgical treatment have engaged nurses as social workers or investigators. The problem of eligibility for free sickness service is as old as the first "free dispensary." When employed as a social investigator, the graduate nurse who has never engaged in the private practice of her profession, or who has for a number of years been in a salaried position, has frequently lost touch and sympathy with the income-producing phases of the practice of medicine; and further, if improperly trained in her social work, her choice of beneficiaries for free sickness service may often be sociologically unfair to the beneficiary and to the neighborhood physicians, who are called upon to render twenty-four-hour-a-day sickness service to all, regardless of ability to pay.

Adjustment to changing conditions is necessary for the medical profession. We must come to think more and more of our responsibilities to our community; but in the meantime we must make some effort to stay the flood of uplifters, who too frequently pauperize their beneficiaries and at the same time deprive members of the medical profession of equitable opportunities for the earning of income adequate to the provisions of home, office and educational equipment essential to good medical service.

The average agency offering free sickness service operates but a very few hours each week. In the meantime, people of the community concerned are dependent twnty-four hours a day upon the service of the neighborhood physicians. Enthusiasts for social relief should therefore take cognizance of the fact that the withdrawal of a large number of possible patients from the clientele of the physician of a community may sooner or later result in a further diminution in the number of local physicians available for twenty-four-hour-a-day service.—W. F. Donaldson, Pennsylvania Medical Journal.

SO-CALLED CHAUFFEUR'S FRACTURE*

By PHILIP STEPHENS, Los Angeles

It might seem to the casual observer, in this day of mechanical advancement and perfection of the automobile, that the so-called "chauffeur's fracture" would be scarce, or almost absent from the list of our fracture cases.

Recently, in getting together a collection of wrist fracture cases for a symposium held by our Industrial Section, I was struck by the many, or, I might say, the majority of my cases which had as their causation the cranking or backfiring of an automobile. A great many of these cases were typical Colles's fractures, or what I believe to be described in most textbooks as "classical" Colles's fractures, but which are not the radial fracture described by Colles of Dublin. We find the same types of wrist fracture produced by automobile cranking that we have always had and still have from falls upon the outstretched hand.

In spite of the advent and general use of self-starters, their use is mostly limited to passenger or pleasure cars, while the heavy trucks and light delivery cars must still be cranked. They are capable of producing many injuries other than wrist fractures, ranging from these to many varied and unlooked-for conditions, due either to direct violence or the handle of the crank being wrenched violently from the hand.

These, however, will not be discussed, but only the bony injuries to the wrist—usually radial head, and termed chauffeur's fracture. I am free to admit the term is neither correct nor scientific, and is used only to designate the cause of many types of fracture, anatomically and mechanically, which occur as the result of this most potent and usually direct force delivered to the wrist. To me, it is remarkable how many varieties occur, but this is easily accounted for, considering the mechanical factor of the production.

Backfiring, or the explosive force which tends to suddenly change the direction of the automobile crank or handle, when being carried around in a circle, may happen at approximately four points in the circle in which the handle is being carried. This being the case, the hand grasping it may be in a neutral position, it may be flexed on the wrist, or dorso flexed. These may also be altered by the position assumed by the operator standing in front of the car, certain postures tending to bring the arm in supination, or the reverse, pronation, all of which receive the force transmitted in a different line, and produce different anatomical results, varying as widely as the many positions assumed.

It is plain to be seen, then, that the mechanical factors in the production of these injuries are practically the same as those which have always been described in our textbooks as the cause of most of our wrist breaks, and this long before the advent of the automobile, viz., a fall with the hand outstretched, catching oneself on the dorso flexed hand, and modified less commonly by alighting on the flexed hand, with arm thrown to the side of the body in position of supination, or more toward the front in falling forward with the arm in pronation.

Time will not permit a review of the many types of wrist fracture produced by mechanical force. However, a few of the common forms will be discussed, with their treatment and progress, from the industrial standpoint.

I think I am correct in saying that the great majority of skeletal injuries of the wrist due to automobile starting are rather minor in character, if properly recognized and properly treated; that the majority are small fissures, with no deformity or defect in alignment or position. The commonest of these, perhaps, is the fracture of the radial styloid process, simple in its aspect when the small fragment is not displaced, but important when we consider the fact that our fracture line runs into and impairs an articular surface in its apposition and articulation with the metacarpals.

Then there is the minor fracture, transverse usually, in young subjects, following the epiphyseal line, and which might be properly called epiphyseal separation.

More nearly simulating this is the so-called cortical fracture, in which the cortex is fractured, there being no disturbance of the periosteum, which, unless the radiograms are unusually good, will not show until there is a liberal amount of callus thrown out, and this in early pictures is very likely to be overlooked. These facts, I believe, are of great importance from an industrial standpoint, and in my experience I have had several cases in which I had made a diagnosis of a simple sprain, and in which the pain, swelling and loss of function persisted. Later pictures showed plainly a distinct line of callus, proving an actual fracture had existed.

Perhaps the most important lesion is the so-called typical or classical Colles of the wrist, being a fracture within the last inch of articulation—may be transverse or oblique, the lower fragment being displaced backward so that the articular surface looks downward and backward. This fracture may be complicated by a fracture of the styloid of the ulna, or even of the scaphoid. The latter particularly should never be overlooked. This type of deformity produces the typical silver fork, spade or bayonet deformity so readily recognized. To me, the worst form of this peculiar variety is where the line of fracture is extremely oblique and by reason of this extreme obliquity the correct position is very difficult to properly maintain. We may have practically the same line of fracture, but with displacement downward and forward, sometimes called reverse Colles, but really described and properly named by Dr. Smith.

These forms are also complicated with comminution, or added lines of fracture running into the articular surface of the head, making T or H fractures.

But perhaps the most important of all from the standpoint of treatment, loss of time in industry and bad functional results, is the impacted variety

* Read before the Section on Industrial Medicine and Surgery of the Medical Society of California, at Yosemite National Park, May 15, 1922.

in older subjects. These very often, in spite of our best efforts, result in impaired flexion, pronation and supination, by reason of the usual shortening of the forearm on the radial side. Instead of having a "half moon" concave joint surface with which to articulate, with the composite-convex surface of the metacarpals, we have a flat-square surface which does not fit, and deformity, pain and disturbed function result.

As to deformity, I have spoken of the silver fork type, which is so unmistakable that we may all recognize it at sight; but I believe the most common and least spoken of is where the entire hand has the appearance of being shifted toward the radial side, with an undue prominence of the ulnar styloid and with a typical fullness and obliteration of the wrinkles over the front of the wrist. Crepitus is rare, and in these days of Roentgen ray we should not attempt to elicit. Pictures should be carefully taken in both planes, and in obscure cases both wrists should be rayed for comparison.

Pain is rather characteristic in one point only that I have any knowledge of, viz., is markedly increased by any manipulation of the thumb.

Treatment—As a great majority of fractures of the lower end of the forearm are simple and without displacement, the treatment is comparatively simple. Any simple single splint may be applied to the palmar surface, reaching from elbow to middle of palm, padded to conform to the normal arch of the forearm. It should be held in place by adhesive straps at wrist and below elbow, and firmly bandaged over all.

The "classical" fracture, however, is more difficult to manage, and here we find that the anatomy and mechanical force used in the causation of the fracture must be well borne in mind in order to properly reduce and maintain this correction comfortably and gain best results with perfectly useful, functioning wrists.

I believe that more failures and deformities are the direct result of improper or insufficient attempts at reduction than any other factor. Practically all of these fractures are easily diagnosed, even before we get our picture, and the vast majority of patients need a short anesthetic, either gas or ether, in order for the surgeon to use the best methods and manipulation to correct the deformity. Thus, the task is fairly easy, when it is kept in mind that the deformity must be increased before the short fragment is set in place. To this end, with traction and the hand, and the thumbs firmly over the dorsal surface of the radial head, the patient's hand is firmly forced back and out, then down and in, which usually drives the short fragment downward into place, and the original deformity is then brought, roughly speaking, upward and outward. The surgeon should correct, or over-correct, by maintaining a position with some retention, the position tending downward and inward, viz., flexion and inclination downward and toward the ulnar side. There are many ready-made splints manufactured and sold with this conformation in mind, and very often in emergency can be carried and used to advantage—the Walker, of papier mache, molded and perforated aluminum, etc., etc. However, the molded plaster, I believe, is ideal, especially in those cases where the obliquity of the fracture line is great and there is a tendency for the short fragment to displace backward.

In order to maintain position between reduction and application of splints, a roller bandage may be lightly grasped by the patient, or, if assistance is not obtainable, the arm may be placed on the patient's thigh, the hand pulled firmly over the three-quarter flexed knee, and the posterior one-half of the splint be molded on in this position.

A circular plaster cast should not be used, or, if used, with extreme care, or cut along both outer and inner borders, even before perfect solidity of the cast is obtained, in order to provide for swelling and frequent after-inspection.

Anterior and posterior splints of board are good and easily applied, preferably with a tendency toward pistol shape or slight angulation toward the ulnar side, and proper padding of the palmar half under the wrist is made to conform to the radial arch. The wrist should be inspected often, and at each inspection, if possible, the apparatus removed and the arm gently bathed with alcohol.

Early passive motion and massage are extremely important, especially for the aged, or even those beyond adult age, as I believe the prolific source of bad results, next to improper reduction, is prolonged splinting, without proper passive movement and massage.

In a great many cases of the impacted variety, complicated with comminution of the head, fractures and ulnar styloid, especially in aged patients, radial shortening will result, together with tenosynovitis, prolonged convalescence, and eventully some permanent disability. In this event, the surgeon must begin early, with all energy, to apply means at hand to lessen this deformity and loss of proper function, with early massage, manipulation, hydrotherapy, etc.

Three weeks is a fair average for the wearing of splints. No support, wrist band, or adhesive strapping is especially needed unless for the psychic effect on the patient, and this phase of treatment of the average industrial case is one that must be carefully considered.

Operative interference for old deformities, bad results, poor functioning, shortening of radius with resultant defects, are resorted to, but with, I am free to say, not very brilliant results in my own experience, and is perhaps an additional incentive to increased effort in treating them properly in the beginning.

The Thomas wrench is often useful, if followed by careful massage and hydrotherapy, in maintaining the motion gained by the force used to correct deformity.

In pronounced impacted cases, with shortened radial side, a resection of a short portion of the ulna often restores the proper relation of the two bones forming the articular surface, and thereby improves flexion and the related movements of the wrist.

An osteotomy of the head of the radius is often of great use in cases of deformity where there appears to be a lateral shifting of the entire hand

toward the radial side, with an accompanying prominence of the ulnar head.

Operative interference, with removal of one or more fragments, is usually necessary in cases of fracture of the scaphoid or semi-lunar, before improved or perfect function is obtained.

I believe the average conscientious surgeon of long experience in the treatment of wrist fractures, when reviewing and summarizing his cases carefully, sees some results which cannot add to his ego, and he will feel more keenly the responsibility of caring for a case in hand. However, he will probably have arrived at a sound and sane conclusion which has caused him to fairly well standardize his procedure, as follows: Complete reduction immediately after the injury, the appreciation of the factors of treatment and after-treatment, very early motion, and short time of immobilization. When these principles are carefully and conscientiously carried out he may feel that the majority of his wrist fracture cases will result satisfactorily.

REMOVAL OF PUS TUBES AND SAVING OF THE OVARIES, AND SUSPENSION OF THE UTERUS.

By F. P. CANAC-MARQUIS, M. D., San Francisco

The essential features claimed for this operation are as follows:

(a) Removal of the pus tubes, including a small portion of the uterus at their point of attachment.

(b) Protection and preservation of the ovaries by means of covering them with broad ligament.

(c) Fixation of the uterus in a proper position by means of fastening the round ligament to the abdominal wall.

The technique of the operation may be best described by reference to the figures.

Kocher forceps are now thrust through the apo-

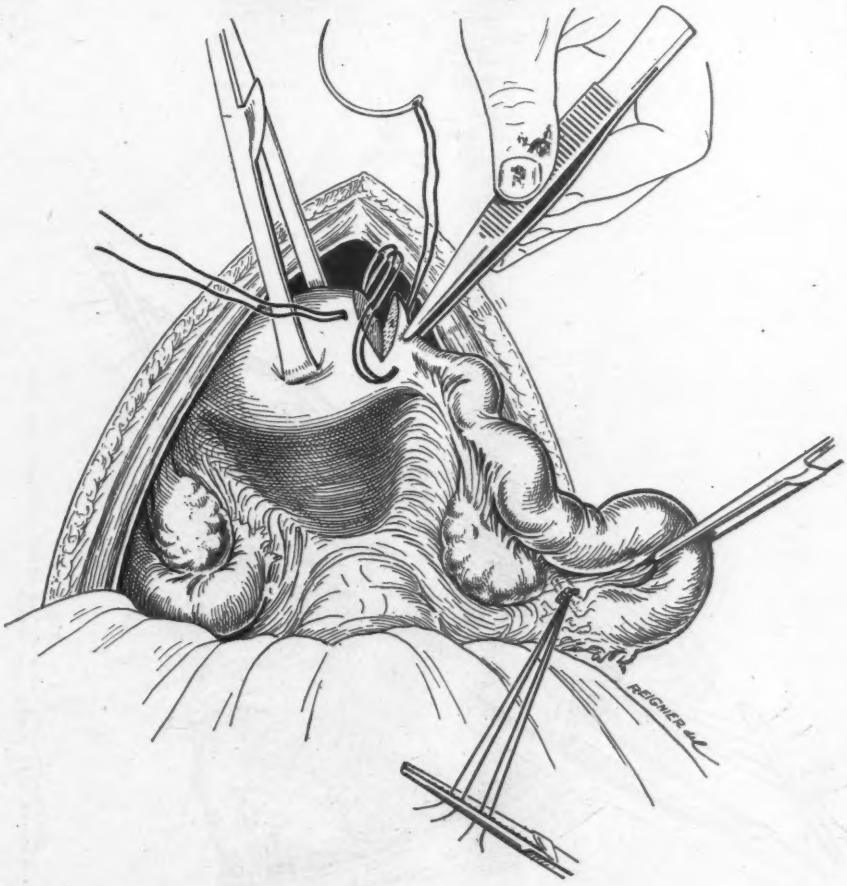


Fig. 1

Fig. 1—The ovarian artery has been ligated and the removal of the tube begun. Note that a V-shaped piece of the uterus has been excised at the tubal attachment. This eliminates the occurrence of the post-operative pain so often observed and due to the small stump of the tube allowed to remain.

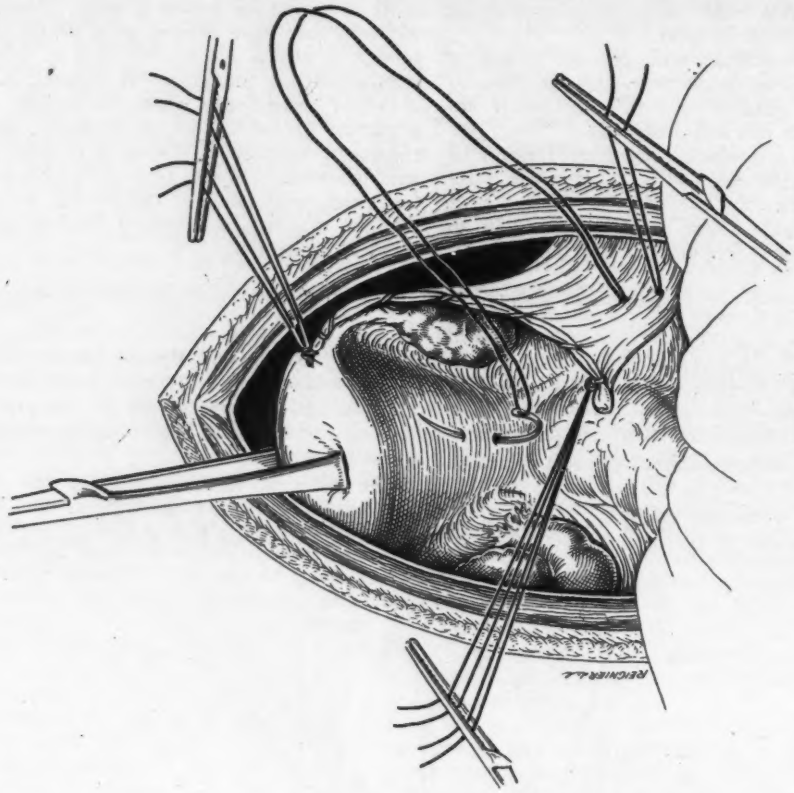


Fig. 3

Fig. 3—The broad ligament and the posterior surface of the uterus have been transfixed by the suture preparatory to covering the ovary by the ligament.

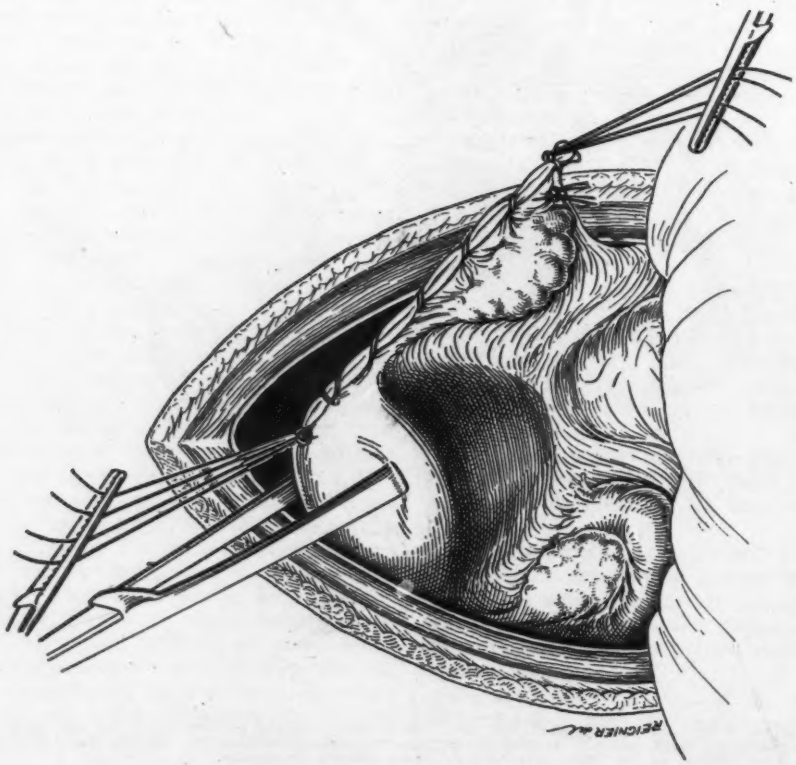
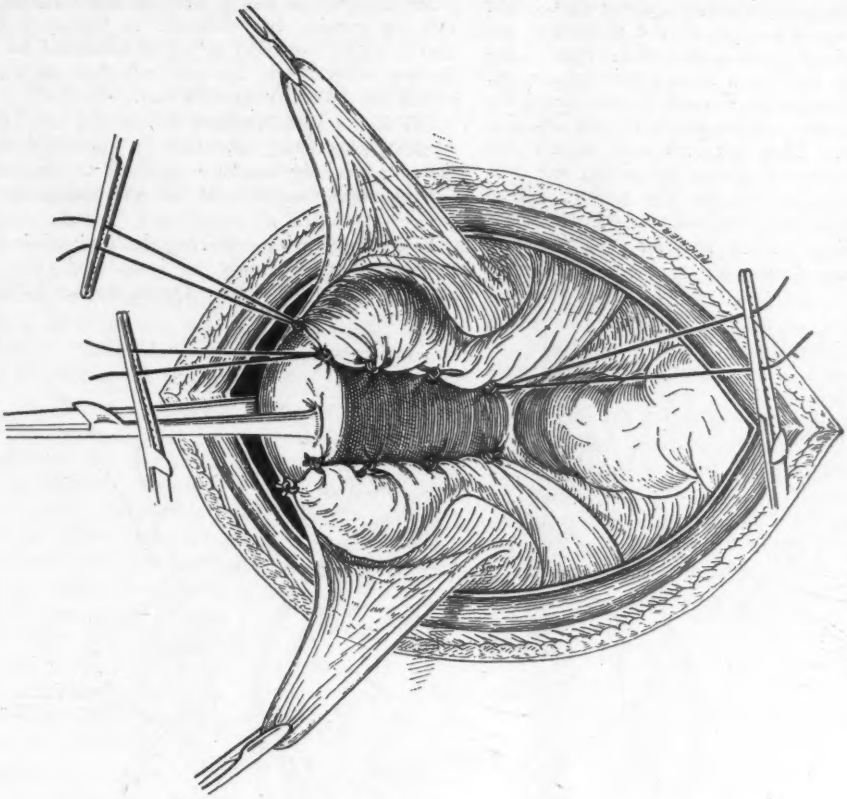


Fig. 2

Fig. 2—The cut edge of the broad ligament has been sutured with continuous catgut.



Figs. 5 and 6—Sutures complete on both sides. The ovaries are now completely protected and the peritoneal adhesions and the new circulation bring about a regeneration of the ovaries in their natural environment and keep them in a healthy condition; even though only a part of the ovaries remains, it can be encapsulated in the same way, providing, of course, it be healthy.

Fig. 5

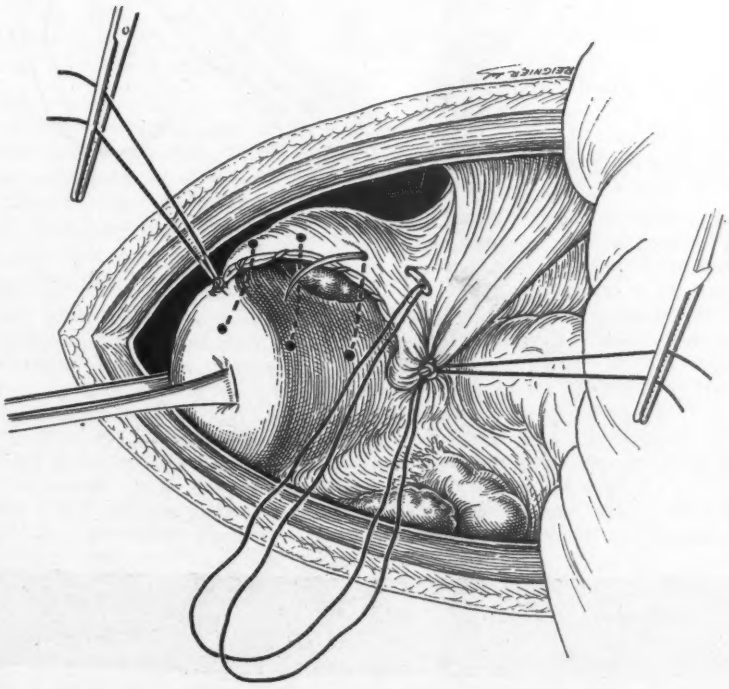


Fig. 4—The process begun in Fig. 3 is being continued, the edges of the broad ligament being invaginated so as to leave no raw edges.

Fig. 4

neurosis, muscle, and peritoneum, about six to eight centimeters from the edge of the abdominal incision, and made to grasp a loop of the round ligament which is held by a second pair of forceps. The loop is then drawn through the wall and sutured to the aponeurosis as shown on the left side of this wound. This last step will correct any uterine displacement that may be present and will cause no further trouble to the patient. This method of fixation will also radically cure complete prolapsus uteri providing anterior and posterior calporrhaphy are done prior to the suspension if necessary.

In cases where pus is encountered I made it a rule on opening the abdomen to introduce from four to eight ounces of sterile camphorated oil. If the pus tubes break, the pus will float on the oil and it can be easily sponged out.

Oil is the best lubricant to prevent any of the septic matter being absorbed by the peritoneum. When everything has been removed or repaired, I put in more camphorated oil and sponge it out well.

In all cases where the camphorated oil is used a drainage tube should be introduced, the two openings facing the pubis. Drain, size used Fig. 7.

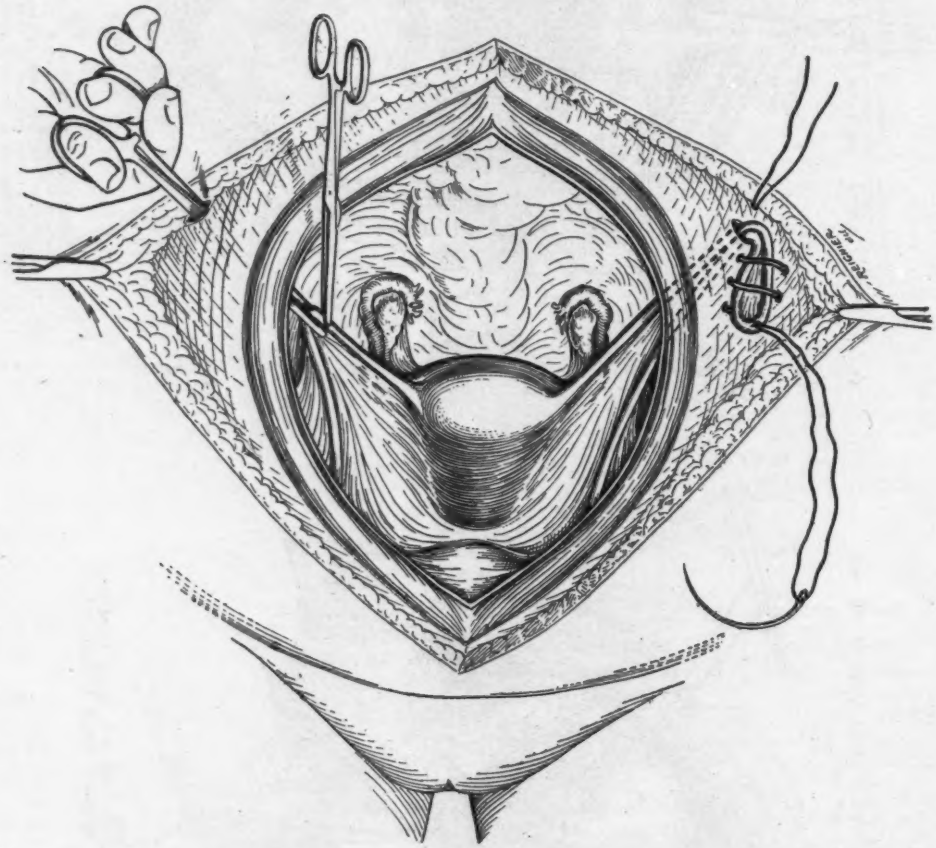


Fig. 6

Fig. 7

PRE-OPERATIVE EXAMINATION*

By F. F. GUNDRUM, M. D., and J. B. HARRIS, M. D., Sacramento

To the physician, in the smaller communities at least, come for examination prospective patients of surgical colleagues. A goodly portion of these appear without the knowledge of the surgeon and without informing the physician of their previous surgical advice. They desire to know whether an operation is indicated, how much benefit is apt to result and how much risk they run of dying. The physician, although having no advantage over the surgeon in answering the first and second, should perhaps be qualified to give a more adequate estimate as regards the third question.

F. W. Birtch, in discussing the 1914-15 reports of the Massachusetts General Hospital's post-operative deaths in chronic surgical condition, says that in one-third death was due "to the lack of pre-operative diagnostic skill to ascertain reserve power of other organs, or extent of primary disease or number and influence of concomitant disease." He advocated the intensive group study of all chronic cases and reported results of a series at St. Luke's Hospital, San Francisco. This study did not stress surgical risk or endeavor to put it upon a mathematical basis. Others have laid emphasis upon the blood pressure as a criterion for estimating operative risk.

Miller published a study of one thousand patients classified according to the rule promulgated by Moots: "When the pulse pressure divided by the diastolic pressure (PP/DP) is greater that 75 per cent or less than 25 per cent, patient is probably inoperable," which rule Miller praises as having been useful to him.

For some years it has been our custom to refer very ill or handicapped surgical patients for medical appraisement before operation. Until the last two years we had made no systematic effort to find out how much danger was involved in an ordinary surgical procedure and what findings were to be looked upon as of more sinister significance in evaluating operative risk.

In this study, patients to be operated upon were given an ordinary clinical examination and an effort made to express in per cent the result. Record was made of sex; age; haemoglobin; blood pressure (systolic, diastolic, and pulse); heart (size, rate, rhythm and valves); lung and urinary findings. A number indicating the clinical estimate of the status of the patient was set down on the chart. At first we tried to make this number proportionate to the published percentage death rate for the various operative procedures. This proved unworkable because of the physician's frequent unfamiliarity with this method. The number set down then represented the estimated vitality of each individual, a normal being 100 per cent. After the patient had left the hospital, the charts upon which the anesthetic, surgical procedure, operative behavior, and post-operative course had now been entered were summed up. Sex and age were found of no significance and excluded; sex having no bearing at all and the matter of age being adequately covered by clinical findings. Temperature in itself was found to have little bearing, those patients with fever being judged upon other grounds. The pulse rate varied from 52-130. Except in two heart failure cases, the rate depended obviously upon fever, goiter, or neurosis. Urine examination was made in all cases. This did not prove very helpful; we had no patients suffering from diabetes or parenchymatous nephritis. Where albumin or casts were found, acute inflammation elsewhere with fever accounted for these findings in the low blood pressure cases; or the circulatory status, blood pressure particularly, served as an index to the amount of disability present.

There were 325 patients examined in which operation was postponed in 9 (3 per cent), 2 because of acute heart failure and 7 because of acute chest conditions. Three hundred and sixteen patients were operated upon. Mortality, 7 or 2.2 per cent. Two of pneumonia, both after excision of a ruptured appendix; two of peritonitis, one from a gangrenous ovarian cyst, and one from soiling in the excision of a cancer of the rectum; one of hemorrhage in a myomectomy; one of empyema of gall bladder; one of Addison's disease after incision of a large lumbar abscess. These may be classified somewhat according to the Massachusetts plan as:

1. Surgical failure, 2 (28 per cent), i. e., the hemorrhage and one peritonitis due to soiling.
2. Poor medical judgment (14 per cent), i. e., the Addison's disease.
3. Surgical calamity, 2 (28 per cent), i. e., the pneumonias.
4. Unavoidable because of condition present, 2 (28 per cent), i. e., one peritonitis (gangrenous cyst), and one toxemia (gall bladder).

This classification however, gives a very inaccurate picture of the problem. Five of these seven patients were operated upon for the drainage of pus and are therefore to be classed as emergency surgery. They are included here only because they were "estimated" before operation. The death rate thus appeared to shed small light upon the adequacy of the pre-operative method of estimating risk.

Post-operative disturbances of circulation and lungs gave more interesting results when compared with the protocol from the antecedent examination. The number and nature of pre-operative abnormalities with post-operative disturbances follow:

Heart pre-operative findings—Normal, 219 (69 per cent); abnormal, 97 (31 per cent); abnormalities included increase in size, 78 (25 per cent); arrhythmias, 13 (4 per cent); sinus, 10; extrasystoles, 3; murmurs, 38 (12 per cent); diastolic, 4; systolic, 34 (of these, 15 were thought inconsequential).

* Read before Butte County Medical Society, December 14, 1922.

Post-operative circulatory disturbances were noted fifty-one times (16 per cent). These were found to be distributed as follows: (a) With normal sized heart 16 per cent; enlarged heart 19 per cent. (b) With regular heart 48 (15 per cent); irregular heart 24 per cent. (c) With normal sounds (16 per cent); with murmurs (18 per cent).

Thus the heart abnormalities, though considerable in number, produced very little effect upon post-operative course.

Lungs were normal 237 times (75 per cent); abnormal 79 times (25 per cent). These abnormalities were divided clinically into fibroid apex, 24 (30 per cent); active tuberculosis, 8 (10 per cent); bronchitis, 21 (29 per cent); emphysema, 25 (31 per cent); basal dullness, 1.

Post-operative disturbances of the lungs were noted 44 times (14 per cent). Of the 237 normals, 19 (8 per cent), showed some pathological changes in the lungs; bronchitis in 13 (6 per cent); pneumonia in 3 (1 per cent); pleurisy in 3 (1 per cent). Of the seventy-nine with abnormalities of the lungs, 25 (37 per cent), developed post-operative disturbances. These were bronchitis, 18 (23 per cent); pneumonia, 7 (9 per cent).

Distributed among the four groups we find: Fibroid apex was followed by bronchitis 8 per cent, pneumonia 4 per cent; pulmonary tuberculosis by bronchitis 0, pneumonia 12 per cent; bronchitis by bronchitis 33 per cent, pneumonia 14 per cent; emphysema by bronchitis 36 per cent, pneumonia 4 per cent; basal dullness by bronchitis 0, pneumonia 100 per cent.

Thus, although lung abnormalities were found in less number than those of the heart, post-operative events attach to them a graver significance. Bronchitis and emphysema seemed especially apt to cause trouble. The proportion of lung disturbances in those showing even slight abnormalities was over four and one-half times as great as among those with normal lungs.

Blood Pressure—Systolic varied from 62-210; arbitrarily divided into 3 groups: 141-210, mm Hg, 30 (10 per cent); 91-140, mm Hg, 269 (85 per cent); 60-90, mm Hg, 17 (5 per cent).

Post-operative circulatory disturbances: 141-210, 5 (16 per cent); 91-140, 44 (16 per cent); 60-90, 4 (25 per cent).

Thus systolic pressure higher than usual was not reflected as a surgical handicap. Pressure below 90 was somewhat more dangerous.

Diastolic pressure: 91-130 mm Hg, 31 (10 per cent); 66-90, mm Hg, 251 (79 per cent); 30-65, mm Hg, 35 (11 per cent).

Post-operative circulatory disturbances: 91-130, 3 (19 per cent); 66-90, 39 (15 per cent); 30-65, 8 (23 per cent).

Again a moderate increase in trouble is indicated among the patients with low diastolic pressure.

Haemoglobin—Haemoglobin varied from 62-100. There were no very low readings in this series, the lowest being 62 per cent. They were divided into two groups: Haemoglobin 81-100, 282 (89 per cent); 60-80, 34 (11 per cent).

Post-operative disturbances were as follows: 81-100, 58 (20 per cent); 60-80, 13 (38 per cent).

These figures again indicate a noteworthy increase in the lower levels.

Anaesthetics used were: Gas in 33, and ether in 283.

Post-operative lung trouble showed for: Gas 12 per cent, and ether 14 per cent, an insignificant difference.

Operations were: Abdominal, 118; pelvic, 146; extremities (included thyroid and breast), 50; chest, 2. Duration of operations 5 to 90 minutes; average 40 minutes.

Shock was also studied, but without reaching definite conclusions.

In endeavoring to reduce our pre-operative examinations to an arithmetical figure, we made use of several formulae. The application of Moots' method showed: "Operable," 289, of which 5 died (2 per cent); "inoperable," 27, 2 died (7 per cent (one of these from surgical peritonitis). Not a very helpful classification.

We tried many homemade rules, such as "subtract 1 per cent from the general average for (1) bloodpressure above 150, (2) haemoglobin below 80, etc., but were unsuccessful in achieving any "rule of thumb" which covered the various factors and gave at all reasonable figures.

The clinical rating stood the best test, though here we gave too much weight to heart and not enough to lung abnormalities. For comparison they were grouped as follows: Over 75 per cent, 250, died 1.6 per cent, post-operative trouble 19 per cent; 51-75 per cent, 49, died 2 per cent, post-operative trouble 32 per cent; 0-50 per cent, 17, died 12 per cent, post-operative trouble 60 per cent.

CONCLUSION

1. Ordinary surgical procedures well done, exhaust but a small percentage of the vitality of the average patient.

2. Heart abnormalities (without heart failure), did not seriously increase the surgical risk.

3. Bronchitis and emphysema proved to increase notably post-operative dangers.

4. High blood pressure *per se* did not indicate increased danger, but low pressure increased the post-operative risk.

5. Low haemoglobin values added to the surgical risk.

6. Moot's rule was useless in our hands.

7. We were unable to devise any formula for indicating operative risk.

8. Clinical judgment based upon thorough examination was the best index to surgical and post-operative risks.

EPIGASTRIC TUG*

By MARK L. EMERSON, M. D., Oakland, Cal.

Epigastric tug is not uncommon but frequently it is unrecognized. Neither the patient's symptoms nor the physical findings fit the more commonly thought of surgical pictures. The pain and discomfort are entirely disproportionate to what one is sometimes able to demonstrate, yet the lesions disclosed at operation, and the subsequent relief are sufficient proof that epigastric tug on the falciform ligament may be responsible for pain more often than one might imagine.

Upon examination, all one is able to find in the condition referred to is a small subcutaneous tumor in the linea alba, between the umbilicus and ensiform cartilage. Indeed, on account of their small size, it is not always possible to palpate these tumors; but from the symptoms, and as a result of having epigastric tug in mind, one may, having excluded other conditions, infer their presence. The small tumors under discussion are sometimes spoken of as epigastric hernia, or preperitoneal areolar tumors, or simple lipoma. The condition under discussion, however, is not an epigastric hernia. Before arriving at a diagnosis of epigastric tug, it is necessary to eliminate as possibilities all those other types of hernia which may occur in the upper abdomen at or about the median line, ventral hernia, umbilical, post-operative, post-parturient, traumatic and other well recognized hernia should be excluded. Consideration in this discussion is therefore confined to the small areolar tumor coming through the linea alba between the umbilicus and ensiform cartilage, and commonly termed epigastric hernia.

A search of medical literature reveals little concerning the subject. Quervain says: "If the diagnosis of epigastric hernia were always made in time it would prevent many so-called dyspeptics wasting time on treatment for indigestion, for a simple surgical measure could at once restore the patient to health."

Maskowitz, during the past few years, has diagnosed hernia of the falciform ligament a number of times and reports having operated upon over twenty cases similar in character to those under discussion.

Considering for a moment the anatomy: The linea alba, in the median line of the abdomen, runs from the ensiform cartillage to the pubes. It is an aponeurosis formed by the sheaths of the recti muscles. Broad and distinct above the umbilicus, the linea alba diminishes in the lower abdomen and before reaching its insertion in the pubis almost or quite disappears, leaving the recti muscles nearly in contact with each other. The fibres of the linea alba run longitudinally, obliquely and transversely. The transverse fibres are the strongest, and not infrequently have gaps between them. The openings, or gaps, between the transverse fibres of the linea alba are the site of the type of hernia responsible for the tug, and they allow the subperitoneal fat to escape but not always to return.

At operation the herniated fat is found to have a constricted pedicle firmly grasped by the fibres of the slit in the linea alba. The peritoneum does not protrude and is separated from the linea alba by the transversalis fascia, but between the two is a certain proportion of fat, and it is this, the next adjacent tissue to the weak spots in the linea alba, that force their way through and become entrapped.

The falciform ligament is a reduplication of peritoneum. The lower attachment of the falciform ligament is along the line of the linea alba, from the umbilicus to the ensiform cartilage, and in its attachment spreads both ways from the midline, but more to the right than the left. The adipose tissue contained within its broadened layers, anterior triangular attached surface, is in close contact with the transversalis fascia. Given therefore an opening, or number of small openings in the transversalis fascia, the first tissue that could possibly be forced through would be the preperitoneal fat within the folds of the falciform ligament.

The openings in the transverse fascia are very small, and the component parts of the linea alba strong and inelastic, which may explain why the majority of these so-called epigastric hernia are small. Reviewing the mechanism of formation, Quervain states that the first protrusion is a mere lobule of fat, which increases by growth. If, however, the hernial development is greater than the fatty proliferation, or contains peritoneum or omentum, the case then becomes one of epigastric hernia. It is not possible to differentiate definitely between a true hernia, with reducible omentum, and a subserous lipoma.

The writer is of the opinion that the first cause of the small aerolar tumor in the upper linea alba is encouraged by the blood vessels passing through the transversalis fascia and aponeurosis of the linea alba. Prolongations of the fascia follow these blood vessels, later followed by small globules of fat from the areolar tissue which, gradually accumulating in number, sooner or later become a recognized mass. As this mass of fat globules increases in size, it then becomes organized with either cicatricial or semi-fibrous bands, often forming a glistening capsule and simulating a true hernial sac. The mass flattens out in a button-like or mushroom shaped head, causing resistance to the constant tugging of the flexible falciform ligament, and this, under the strain of the more violent intra-abdominal stress, causes the so-called epigastric tug, with more or less severe or intermittent pain referred to this region.

PATHOLOGY

The writer has endeavored in a few instances, when operating upon the stomach, or making an exploratory incision in the upper abdomen, to study more carefully the linea alba and observe whether either small transverse or round openings did not normally exist without the presence of a tumor. This condition, however, was never observed. Aside from the organized areolar pad, or button subcutaneous in position or displaced from the folds of the falciform ligament, the transverse fascia and linea alba, making a permanent tug on the falciform ligament. There is no special path-

* Read before Alameda County Medical Society, February 20, 1922.

ology of immediate danger to the patient except from the irritation and local congestion caused thereby. In case No. 4 of the operated cases, the writer felt so sure that he was dealing with a true hernia of omentum covered by a glistening fibrous capsule simulating peritoneum, that a free incision was made into the abdomen to the right of the median line. A probe was passed along side of the pedicle of the tumor through the opening in the transverse fascia and deflected to the right. The probe at no time entered the abdominal cavity, but remained within the folds of the falciform ligament. The tumor was then grasped with a forceps and the pull or tug on the falciform ligament could be plainly demonstrated. The impulse could be felt even to the anterior surface of the liver.

In case No. 3, which was operated under novacain before a class of students, the writer grasped the tumor with forceps and pulling upon it, asked the patient if that was the pain he complained of. The patient stated that it was and that the pain was very severe and went through to his stomach and back. The severe intra-abdominal pain from this experiment lasted several minutes. The size of the tumor varied in the writer's case from the size of a grain of wheat to an unshelled almond. The pedicle was always well organized and contained an unusually large blood supply for the size of the tumor. The pedicle was always adherent, and the tumors irreducible.

SYMPTOMS

Pain in the upper abdomen is invariably the first symptom. Case No. 3 was an alcoholic and the writer thought he was dealing with a case of gastritis. The areolar tumor was not observed on first examination. Patient was put on a milk diet, and receiving no relief after three days, he returned. At this time I definitely palpated and diagnosed a small areolar tumor in the epigastrium. In all cases (ten) the diagnosis was made by the writer. The patients did not know they had an epigastric tumor. The age of the patients varied from nineteen to fifty-five years. However, the development of this condition is marked by more or less positive signs. There is invariably pain at the site of the tumor, which is undoubtedly the seat of an active inflammatory process with more or less constant irritation. Each and every case had positive pain and tenderness at the site of the tumor. So constant has been this localized pain in all cases that in one of the operated cases the diagnosis was made on the symptoms and localized pain, although the tumor was not palpable. In another case, after demonstrating the presence of a tumor to my own satisfaction, I so flattened out the tumor by rough manipulation that I was later unable to demonstrate it to a colleague. At the operation which immediately followed, the tumor was found irreducible and flattened out to about the size and thickness of a dime. I would therefore suggest, at first palpation, very gentle manipulation with one finger.

The writer has never observed these tumors in children or women; they have all been in adult males. The tumors generally originate in the middle line, although, as previously stated, the linea alba is a little wider in the upper abdomen and the tumor may be deflected to the right or left. Localized pain is the cardinal symptom, causing either acute or intermittent distress.

Differential diagnosis—In obese patients, especially if the tumor is small, the diagnosis may be difficult or quite impossible; the history with the onset of pain, the specific localization of a tender point in the upper linea alba, elicited by light pressure upon the abdominal wall, a pain that has no relation to stomach activity and often associated with exercise or intra-abdominal strain, will be a leading point. Tumors at or near the umbilicus are generally associated with umbilical hernia, a portion of which may be deflected upward by intervening transverse fibrous bands. Larger hernia in the epigastric region are not uncommon. True lipoma may be found in this region as well as any part of the body, or they may have originated in the falciform ligament, with the pedicle detached, and then become a simple unattached subcutaneous areolar tumor.

True epigastric hernia should have a peritoneal covering or sac. The writer has not observed this peritoneal covering in the series of cases referred to and does not consider them true epigastric hernia.

Villard, in Lyon Chirrugical, Nov. 1920, stated that epigastric hernia is merely a hernia of the falciform ligament of the liver through the linea alba.

It must not be overlooked, however, that while a patient may have a true epigastric tug, he may also have some other serious intra-abdominal lesion which should be carefully differentiated. It is stated in the literature that areolar tissue tumors in this region occur twenty times more frequently than epigastric hernia.

TREATMENT

This consists in removing the tumor or resistant mass and thereby relieving the tug on the falciform ligament. This relief may be accomplished under local or general anaesthesia. The areolar tumor should be teased apart in order to observe whether or not it contains a peritoneal sac, also to control the bleeding. The pedicle should be ligated. In one instance, the writer cut off the pedicle and was compelled to open the fascia in order to control the bleeding. The linea alba should be carefully examined because frequently more than one tumor exists. To prevent recurrence, the pedicle must be dislocated within and underneath the opening, and the fascia overlapped.

The writer has had five operative cases of this type and has also observed five other cases not operated on, but which from their clinical symptoms and localization, there was reason to believe they were similar in character. The operated cases have been completely relieved of their symptoms. The unoperative cases are still complaining of more or less intermittent distress, believing that their symptoms are due to more serious intra-abdominal troubles in the neighborhood of their gall-bladder or stomach.

A few days after discussing this paper with Dr. W. S. Porter, on August 2, he asked me to see a

case of what he considered an epigastric tug. The patient was an athletic young man, 24 years of age. He had a good history, also a good stomach and heart. The patient stated that while playing tennis the day before he felt a severe pain in his epigastrium. This pain was so severe as to cause him to stop playing. He thought possibly he had heart trouble.

Physical examination revealed only a small tumor in the linea alba. It was about one-third the distance between the umbilicus and ensiform cartilage. On palpation the patient complained of a tender point at the site of the tumor. When questioned at to whether this tender point was the only one, the patient said it was part of the pain, but that distress was deeper inside the abdomen, toward the back or under the arch of the ribs. The small epigastric tumor had not been observed before.

At operation a median incision through the skin was made over the linea alba underneath the subcutaneous fat. The small areolar tumor was demonstrated. The operator then opened the transversalis fascia, relieving the constricted tumor. A second tumor, or tug, was then discovered. This second tumor had not been diagnosed, it being quite small. The exposed areolar tissue preperitoneal, and the peritoneum of the falciform ligament were then exposed freely underlying the open wound. Dr. Porter, the operator, then grasped both tumors with separate forceps in order to ascertain how much pulling effect these tumors had on the falciform ligament, and was able to draw a considerable amount of the falciform ligament up into the wound, thus demonstrating clearly the pronounced tugging effect which they caused.

These tumors are assuming some industrial importance. The writer was consulted in a case before the California Accident Commission. The patient stated that while lifting a heavy tool-box, he received a sudden strain in his epigastrium and had considerable stomach distress. His family physician observed an epigastric tumor, and later operated for the same, making the report of a traumatic epigastric hernia. The doctor stated the hernia consisted of a small tumor of omentum, but had no peritoneal covering. So the tennis player, referred to in Dr. Porter's case, thought his trouble was due to strain. However, the operative findings of an organized pedicle of areolar tissue with a fibrous prolongation from the falciform ligament does not appear to be an acute affair. Its histological formation would seem to favor chronicity.

CONCLUSIONS

As in all other surgical procedures, a correct diagnosis is essential. A very small incision is recommended for removing these small tumors in order to avoid the appearance of an extensive operation, for the scar might confuse other diagnosticians, causing them to procrastinate should the patient later develop serious upper abdominal trouble.

The statement that the areolar tumor occurs twenty times more frequently than epigastric hernia, is only a conjecture of other operators, as no statistics have been correlated as yet. The writer is of the opinion that small omental tumors are very rare in this region and quite foreign to this location, but that a small tug of peritoneum may occasionally be found. It is also hoped that others will not open the abdomen, as the writer did in one instance for an operation that can be performed by a more simple procedure.

On September 10, while associated with Chas. Coleman, who was about to perform a gastro-enterostomy for carcinoma of the pylorous, at my request he made the incision in the upper linea alba. Preliminary to the incision, no epigastric tumor could be palpated. However, on exposing the transversalis fascia, a small areolar tumor was observed in the middle portion of the linea alba. This was the first case observed by me after operating many times in the median line for this purpose.

The opening in the fascia in this case was much larger than any previous case under observation, the opening being about the size of a slate pencil. The preperitoneal fat was not adherent in the opening, but a small pedicle of fat would bob up and down through the opening with each respiratory effort. This was not a true tug, as no effort at organization of the areolar pedicle had taken place. The patient had not complained of this condition, and it does not appear likely that he would until some organized resistance to the free action of the falciform ligament should occur. It simply goes to prove that this abnormality may occur even in the presence of malignancy.

DISCUSSIONS

Charles A. Dukes—I can readily see that the epigastric tug is going to assume some industrial importance. One of my associates recently sent a patient, age fifty-six, into the hospital for an epigastric hernia of traumatic origin. Upon examining this patient I found he had an epigastric button between the umbilicus and ensiform cartilage. It was very tender, and to this region the patient referred all his distress. However, the patient gave a history of having lost weight very rapidly during the past six months, with exhaustion. A suspicion of malignancy entered into my procedure following this case, so I deferred operation. The patient died six weeks later from general carcinomatosis. At autopsy I observed the typical falciform ligament tug which the reader of the paper has referred to this evening. Since making a closer study of the pathology of this organized tug, I am inclined to think it is a chronic affair and that some unusual strain aggravates the condition causing the patient to complain. I doubt very much if it should be considered an acute industrial accident.

Charles Coleman—At the request of Dr. Emerson, I have been looking for these small epigastric tumors in my upper abdominal cases during the past few months. I have also been making my incisions in the linea alba whenever possible. I had about given up the idea of finding this abnormality when I observed the case, which the reader has referred to this evening. In looking up this subject, Deaver mentions the fact that small openings may occasionally be found in the upper linea alba, and I think it is only when the fat of the falciform ligament becomes incarcerated in these openings that the patient complains. The epigastric tug, no doubt, causes the pain and distress, but I see no reason why it could not be considered an acute affair as well as a chronic condition. If it is an acute condition, why could it not arise from industrial trauma as well as any other type?

SUICIDE *

By JAMES T. FISHER, M. D., Los Angeles, Cal.

Were it not for the fact that the science of medicine is attended by phenomena unique and somewhat bizarre, the practice of the healing art would certainly lose its charm. This is essentially true in the study of the potential suicide. In consideration of this subject, we will not discuss the individual who kills himself because he or she happens to possess a definite mental disease. Such people, because of their prevailing psychosis, commit the overt act because they happen to suffer from a mental disease. In the typical melancholiac the suicide is merely a symptom of the disease. We feel that any depressed individual is a potential suicide. It is, however, quite interesting to attempt to note the causes determining suicide in an individual who is not insane. In our experience, looking over the case histories of our private patients, as well as those seen in public institutions, we find a very large number who are not afflicted with any definite mental disease so far as we are able to determine.

The popular idea entertained by the layman as well as by some physicians is that no one commits suicide who is not insane. We frankly admit that the deed is an insane act, but we know full well that many insane acts are committed by individuals not insane while under the burden of great misfortune or grief. Many such individuals came within the purview of the writer during the late war. Situations involving mental shock with their accompanying feeling tone of depression are common to many at times. How often do we hear the remark, often in a jesting way, that we "don't wish to live," and "death is really welcome," or that "I'll just go away and die"? To a large class of people possessing a psychopathic state of mind under great stress, when the terrors of living outweigh the terrors of death, the individual in a sudden state of emotion ends his life. The state of mind which allows its possessor to suicide is interesting. We have talked with many just before the act; we have talked with others who have been rescued, and in all instances there seemed to be an overwhelming emotion which compelled its possessor to the awful deed. There is a general law operative with man and beast for self-preservation. There is nothing on earth that can change this law except a morbid state of mind comparable, perhaps, to the emotion noted in great anger or grief, where in fact the mind is clouded and the judgment markedly impaired. We, all of us, at times do things utterly foreign to our usual composed state of mind, even to the commission of crimes. In consultation with different insurance companies the fact has been elicited that many have taken out policies with the intention of defrauding through suicide. The law that prevails at present is that one year must elapse before the payment shall be made to self-destroying policyholders. Missouri is unique in that it allows the insured to collect in case of suicide within a few days after payment of premium, the legislature maintaining that suicide is simply an accident.

The good book says, "Thou shalt not kill." Strange as it may seem, not one word is mentioned in either the old or new Testament deprecating suicide. The Catholic and Jewish religions seem to be the only ones that emphasize this injunction. That suicide is contagious is conceded by all and it would be much better if the press would not print the usual headlines and bring the suggestion to many who might be regarded as predisposed. Both suicide, insanity and degeneracy are certainly increasing out of all proportion to the increase in population. Statistics obtained from England and many cities of the United States show this to be a fact. Some years ago our sister city, San Francisco, led the world with a ratio of 72.6 per one hundred thousand inhabitants. This we believe to be due to the excess of males in population and high per cent of foreign born, especially German and Chinese, in whom the suicidal tendency is very common. Next to San Francisco, Hoboken bears the unenviable reputation of 38 per one hundred thousand, which is practically twice as high as the general average.

Suicide is often associated with homicide. It seems to be a fact that the more complex our civilization the greater the opportunity for failure and disappointment, the greater will be the tendency to self-destruction. Everybody seems to be traveling the pace that kills, and the pursuit of pleasure and riches is the one aim which everyone is striving for. The fact that under stress and financial reverses there are not a few who think less of their own lives than they do for the comfort of those they leave behind. It is interesting to note that in London, where there is as much want and degradation as anywhere in the world, the suicide rate is no higher than in Philadelphia, a city noted for its homes and comparative comfort. We are, therefore, forced to believe that suffering and hardship are not the most potent factors in abating the love of life. We are sure that many individuals have inborn traits of character and mind that make the act of suicide easy to embrace when the pin pricks of social and business life appear. It is further interesting to note, looking back over thousands of suicides, that April and September take the greatest number, and that in women, ages of 30 to 45, and men from 50 to 70, are the period of greatest activity. Furthermore, it is firmly established that there is a transmission of the suicidal tendency. It is very apt to appear in the offspring and not at all unusual for it to appear at the same age as it appeared in the parent, and often the same means are sought to establish the end.

As illustrative of one or more types I may be permitted to cite the case of a prominent physician who became ill and lost his fortune. He found himself without means for obtaining the luxuries to which he and his family had been accustomed. He was under my care at the time, suffering from a mild degree of insomnia. He told me he had a policy for $25,000, which would take care of his wife and little daughter when he was gone. He

* Read before the Neuropsychiatry section of the California State Medical Society, Yosemite Valley, May 17, 1922.

then put an end to his life, which, by a perfectly logical process, he deemed was not worth living.

There seems to exist a relationship between sexual perversions and suicide. Last spring I saw a brilliant young college woman, thirty-two years of age, who had traveled extensively and finally came to Los Angeles with her mother, intending to do secretarial work. She was somewhat of an emotional woman and always had a crush on some one of her own sex. She had two or three affairs, but always with some girl friend. She told me she became depressed, life was too stupid to endure, and that the only way out was death. She ended her life one night by taking cyanide of potash. As has been pointed out by Ring, sadism may lead to both homicidal and suicidal tendencies, as exemplified in the case of Harry Thaw. Masochism may also lead to suicide. A patient, thirty-six years of age, who had twenty-nine razor cuts on her arms and legs, took gas to free herself from her unhappy psycho-sexual dilemma. The suicide, then, must be regarded as suffering from a neurosis, or better, a psycho-neurosis, a defense reaction of a morbid state of mind, to which he finally succumbs. This in turn is occasioned in many instances that we know of by his inability to adapt himself to his unhappy situation. The whole question of mental good health is one of adaptation or adaptability. He cannot harmonize with his environment; he is inadequate in solving his domestic or financial problems. The conflict is too great. In the army he would develop a shell shock to enable him to get out of the trenches. In civil life it is a way out of trouble. He meets an obstacle—he can't remove it, so he goes around it. The intolerable situation is there and often times entirely imaginary, but it is up to the psychoanalist to discover the cause, which is often not difficult to do if we appear on the scene in time.

We must admit, then, after noting the various causes which accompany the suicidal act, that the crux of the matter resides definitely in the temperament and mental make-up of the subject. The big lesson learned in the army was the enormous per cent of young men whom we designated a moron group. With these definite findings taken from the mass of young men throughout the entire country, how can we expect society at large to be in any great degree different? We have no desire to be understood that the masses of the people are degenerates; but is it not true that approximately 60 per cent of the people in any city belong to a class which can be designated as only partially responsible and possessing mental attributes which are defective? Not that all of them are feeble-minded or defective to such a degree that they could be recognized as such by any body other than an expert, but is it not true that these people somehow can scarcely earn their living? The analysis shows that they are inadequate individuals, hypersensitive, lacking initiative, often dreamers, and withal, devoid of poise and self-control. This class has but little religious training, and if any, aligned with some of the various cults, which are constantly developing and which grow for a while and then fall to pieces. This class of people has no true philosophy of life and drifts along from year to year, without definite motive. This, I repeat, constitutes at least over one-half of our everyday society as we meet or know it. A large proportion of this class possesses a family tree in which are many instances of mental disease. In our analysis of suicides, it is this class of people that constitute our case reports. Too many of these people live lives that are devoid of resources. Are we not like little children when some toy is broken; fall an easy prey to the big black cloud?

"Is life worth living?" is being asked by many these days. Scarcely can we pick up a paper but we note one or more who find in death their only relief. It is often contemplated a long time before consummated. Many have told me they knew it was cowardly, that they have prayed that some accident might befall them, as they knew it was a great sin to wilfully take their lives. Only in exceptional cases does the record of the suicide show him to be a sensible, well-poised individual, but rather a psychopath; hence my contention that suicides are people mentally lacking that belong to the above mentioned class of the mentally unstable. What poverty compares to the poverty of spirit? To have no reserve, nothing to fall back upon except the loose peg of chance. In contrast, how many we know in the midst of poverty and bereavement who cling to their patrimony of divinity and who go forward through life with dignity and joy to the realms of death!

ANNOUNCEMENT

The Seventh Annual Clinical Session of the American Congress on Internal Medicine will be held in the amphitheatres, wards and laboratories of the various institutions concerned with medical teaching, at Philadelphia, Pa., beginning Monday, April 2, 1923. Practitioners and laboratory workers interested in the progress of scientific, clinical and research medicine are invited to take advantage of the opportunities afforded by this session. Address inquiries to the Secretary-General.

SYDNEY R. MILLER, President,
Baltimore, Md.

Frank Smithies, Sec'y-General,
1002 N. Dearborn street,
Chicago, Ill.

The Trained Nurse—Channing Frothingham recently discussed the education of a trained nurse. He points out that young women should be trained to assist in the care of sick people under the direct supervision of physicians. "There might be a fundamental two-year course in nursing, at the completion of which some sort of title should be given to the individual."

Orville R. Chadwell in a letter to the Boston Medical and Surgical Journal suggested, "Call Frothingham's graduate a 'trained nurse.' We did so call her once. Let the name stand, and devise a new title for the highly specialized individuals of our present-day training schools. I feel confident that physicians and laity will be glad to welcome the re-incarnation of the 'trained nurse.'"

EDITORIALS

PASTEUR MEMORIAL MEETING

The San Francisco County Medical Society held a Pasteur Memorial meeting January 9, at which four excellent papers were read. As a result of delay in receipt of the manuscripts and a crowded Journal for February, it has been impossible to get them to the Journal readers at a more timely and appropriate date. With this explanation of the delay and in view of their character, these papers are being published in this issue of the Journal.

THE SECTION ON SURGICAL ANATOMY

Recently the officers of this section announced opportunities for surgical anatomical work in the laboratory of the University of California Medical School. The dean of Stanford University Medical School extends a similar opportunity to members of the section and of the State Society.

That these two great medical schools offer opportunities for review in anatomical work ought to be a source of congratulation to the State.

This also justifies the wisdom of dividing the work of the State Society into legitimate specialties and sections and expecting these sections, and particularly their officers, to render all-the-year-around service. The officers of all sections are considered officers of the State Society, and the contact during the past year between executive officers and the officers of these sections on various organizational and scientific matters shows an increasing interest, particularly in specialties of medicine not heretofore fully developed in medical organizations.

PROPOSED LEGISLATION

The Executive Secretary of the League for the Conservation of Public Health reports that many bills, affecting public health and the agencies of medicine, directly and indirectly, have been introduced in the present legislature. Some of those now in skeleton form will be completed, and other new ones may be expected during the latter half of the legislative session which opened March 5.

Several of the proposed laws are of considerable importance to the people and to the persons and agencies concerned with the promotion and protection of health. A few are wise, constructive measures calculated to advance the health and happiness of the people and, therefore, should have generous support. Most of the measures have little to commend them, and a few are vicious in their tendencies. Many of the bills will die in committee; others will be defeated, and others with or without amendments will become law.

We have neither the space nor the inclination to analyze all these bills, but we are discussing a few of the more important ones in this issue of the Journal. The amendments, progress and other features of these bills, good and bad, will be followed by our League representatives during the rush of the last half of the legislative session and information will be furnished to the League membership from time to time.

The problem of the budget for the State Board of Health is discussed editorially in the February number of Better Health.

THE SEVENTY-FOURTH ANNUAL MEETING OF THE AMERICAN MEDICAL ASSOCIATION, SAN FRANCISCO, JUNE 25, 26, 27, 28 and 29

Preparations for this great convention are rapidly taking shape. Hundreds of members of the California Medical Association will be on one or more of the various committees, and each and every member is expected to assume his share of the responsibilities and duties of host to the visiting Fellows.

Every member of the California Medical Association is requested to arrange his time so as to be present at the convention in San Francisco from Friday, June 22 to Saturday, June 30.

The meetings will be opened with convention diagnostic clinics in the hospitals of San Francisco and Oakland that are accredited by the Council on Medical Education and Hospitals of the American Medical Association on Monday and Tuesday, June 25 and 26, from 10 a. m. to 1 p. m. These clinics are being planned so as to be interesting and instructive rather than social and spectacular. It is our hope that as many of our members as possible will attend these clinics and take part in the discussions.

Tuesday evening, the general session of the American Medical Association will be held at 8 o'clock. An interesting program of two hours is being prepared for this meeting. An important feature will be the induction to office of President-elect Ray Lyman Wilbur, and Dr. Wilbur's address. Dr. Wilbur is the first Californian to hold this distinguished office, and California physicians should show their appreciation of the honor by attending this meeting, to which all physicians and their friends are welcome.

Wednesday, Thursday and Friday will be devoted to the usual meetings of the various scientific sections, the house of delegates, and the various councils and committees. These will all be held in the Civic Auditorium. All the various halls are being carefully provided with all equipment necessary for the comfort of speakers and audiences. A complete directory showing the various halls will be issued later.

The various California committees responsible for the success of this convention are all busy and the results of their combined labors will be embodied in a special booklet which will be issued from California headquarters, on the Friday before the convention meets.

Monday and Tuesday, July 2 and 3, have been designated Post-Convention Diagnostic Clinic days for all parts of the state. Accredited hospitals in Los Angeles, San Diego and other parts of the state, as well as a number of county medical societies, where no accredited hospitals are avail-

able, are preparing to have clinics on these dates. It is a wonderful opportunity for county medical units to have one or two days of inspirational and valuable post-graduate work, and at the same time entertain two or more of our distinguished visiting Fellows.

At this writing, it looks as if these Convention and Post-Convention Diagnostic Clinics will be the big outstanding feature of the convention.

All members of the California Medical Association should make their hotel reservations now. If you wish us to do this for you or to render you any other service, write promptly to California Headquarters, 806-809 Balboa Building, San Francisco.

THE FIFTY-SECOND ANNUAL MEETING MEDICAL SOCIETY OF CALIFORNIA

The meeting of the State Society will be shorter than usual this year. This is no reason why it should be less important or less interesting. The fact that the meeting is followed immediately by the American Medical Association and several other national medical meetings ought to insure a good attendance at this State meeting. Certainly there will be more visiting Fellows from other states than usual.

The program of the State Society meeting will be published in full in the June number of the Journal. The outstanding features of the program are:

1. Meeting of the Council—Thursday evening, June 21, 8 o'clock.
2. General Session of the State Medical Society—Friday morning, June 22, 10 o'clock.
3. Section Meetings (each section to meet separately)—Friday afternoon, June 22, 2:30 o'clock.
4. Meeting of the House of Delegates and Meeting of the Council with Officers and County Societies and Section Officers—Friday evening, June 22, at dinner. This meeting to continue until all business of the House of Delegates has been transacted.
5. General Meeting (the League for the Conservation of Public Health)—Saturday morning, June 23, 10 o'clock.
6. Meeting of the House of Delegates—Saturday afternoon, June 23, 2:30 o'clock.
7. Meeting of the Council—Saturday evening, June 23, at dinner.

SECTION MEETINGS

A number of sections already have supplied their program complete to the central office; other sections are still at work making up their programs. Some of the sections are arranging to have each author read a five-minute abstract of his paper at their own meeting on Friday afternoon. Other sections are preparing to have two or three selected papers presented in full and other papers presented by title. Whatever the method employed by the various sections, it is important that the titles of all papers and the names of the authors and the sections before which they are to be read be submitted to the State Secretary's office at as early a date as possible.

THE DOCTOR OF MEDICINE PRACTICE ACT

Senate Bill No. 330, now before the legislature, is one of the most important attempts at constructive legislation upon health matters that has been placed before any legislature. Heretofore laws governing the licensure and practice of the healing art in this and in other states have been drawn to meet the requirements of this or that "faction," "school," or political entity and, therefore, usually have been unsatisfactory. These laws usually attempt to include too much. It would be as feasible to make one set of transportation rules to fit all forms of transportation from walking to flying as to try to make one law fit all the varieties of educational qualifications, ethics, modes of procedure and claims of the large variety of groups licensed to practice the healing art. The Medical Practice Act of California has been, and is, one of these compromise laws. This statement does not constitute a criticism of the personnel of the board. Under it have been licensed a large variety of "doctors." In education these vary from practically none to those of the highest academic attainments. In methods of practice and claims they include every class from the university-educated, experienced, ethical physician employing all knowledge of proven values in the diagnosis and treatment of disease to the various types of drugless healers with a bewildering assortment of "remedies" for any and all classes of physical and mental ills.

Attempts have been made in the present Medical Practice Act to insure at least some education for all practitioners by prescribing education measured by "hours" in certain specified subjects. The kind of a school authorized to give these hours and the preparation the student must have before he begins his specified "hours" of "higher education" is not effectively provided for in the law. Educational requirements based upon "hours," or upon anything else that has been incorporated into law, does not harmonize with the other laws of the State governing institutions of "higher education."

As the laws of California now stand, any five persons may incorporate a university or college upon a payment of about twenty dollars and complying with a few other perfunctory rules. Any of these "colleges" can award all degrees that our great universities can award or any other "degrees" they choose to invent. As these "colleges"—and they are numerous—are incorporated under our State laws, who is going to discredit their beautiful diplomas? The most numerous of these schools are those purporting to teach the healing art.

By initiative legislation two groups of special schools and special methods of practicing the healing art won the political right at the last election to license and regulate their own people and their own "colleges." Under these initiatives, which cannot be amended or interfered with by the legislature, the osteopaths and chiropractors still enjoy all privileges of the old Medical Practice Act or any amendments the legislature may make to it and they also have the special rights granted by their initiatives.

The educated physicians of the State feel that at least they should not be penalized for being university men and should have a license law applicable to themselves only; this without disturbing in any way any of the other laws now in force. Senate Bill No. 330 is offered for this purpose. This law has been drafted by the League for the Conservation of Public Health after two years of work including correspondence and conferences with members of the State Medical Society and the League. The principle of the bill has also been endorsed by a committee representing the faculties of the medical schools of Stanford University, University of California, College of Medical Evangelists, Medical Examining Board and the Secretary of the State Medical Society. The complete bill is as follows:

SENATE BILL NO. 330

Introduced by Senator Hurley, January 30, 1923. Referred to Committee on Public Health and Quarantine.

An act to provide for the examination and licensure of doctors of medicine (M. D.'s) for the practice of medicine and any and all of its specialties, including the prevention and treatment of any and all kinds of infirmities, injuries and mental and physical diseases and conditions of human beings and for the regulation of the practice thereof; to establish a doctor of medicine (M. D.) bureau of licensure and provide for the appointment of the members thereof, and prescribe their powers and duties.

The people of the State of California do enact as follows:

Section 1. A self-sustaining bureau of licensure, examination and regulation of the practice of medicine by persons who hold the degree of doctor of medicine (M. D.) from accredited institutions of learning and to be known as "The doctor of medicine (M. D.) bureau of licensure of the State of California," termed herein the bureau, to consist of five members, is hereby created and established. The governor shall appoint the members of said bureau from a list of persons eligible under the terms of this act within thirty days after the filing of such a list as herein provided. The deans of Leland Stanford Junior University school of medicine, University of California medical school and the College of Medical Evangelists and the chairman of the council of the medical society of the State of California shall file such list with the governor and at his office within thirty days after passage of this act. Such deans and said chairman shall thereafter and in the month of December of each year, file a list of such persons eligible for appointment with the governor and at his office and the governor shall fill all vacancies occurring on said bureau during the ensuing year from such list.

No person shall be appointed to such bureau who is not a citizen of this state holding the degree of doctor of medicine (M. D.) from an institution of learning, the requirements of which at the time of conferring such degree were in no particular less than those prescribed by the Association of American Medical colleges or the council on medical education and hospitals of the American Medical Association.

The term of office of each member shall be five years; provided, that of the first bureau appointed two members shall be appointed for one year, two for three years and one for five years and that thereafter all appointments shall be for five years, except that appointments to fill vacancies shall be for the unexpired term only. Each member of the bureau before entering upon the duties of his office shall take the constitutional oath of office.

The governor may remove any member of the bureau for continued neglect of duty or for dishonorable or unprofessional conduct, which shall be deemed to consist of any of the acts hereinafter set forth as grounds for revocation of certificate, as set forth in section four hereof, upon the written certification of such conduct by a majority of said deans and chairman.

Sec. 2. 1. The bureau shall be organized on or before August 1, 1923, by electing from its number a president, a vice-president and a secretary who shall also be the treasurer, who shall hold their respective offices during the pleasure of the bureau. The secretary-treasurer shall make and file with the bureau an official bond, with corporate surety approved by two other members of the bureau, in the penal sum of ten thousand dollars conditioned for the faithful discharge of his duties according to law.

2. The office of the bureau shall be in the city of Sacramento. Sub-offices may be established as required in Los Angeles and San Francisco and such records as may be necessary may be transferred temporarily to such sub-offices.

3. Legal proceedings against the bureau may be instituted in the county of Sacramento, the county of Los Angeles and the city and county of San Francisco.

4. It shall require the affirmative vote of three members of the bureau, except as herein otherwise expressly provided, to elect its officers, to carry any resolution, to adopt any rules, pass any measure or to authorize the issuance or the revocation of any certificate.

5. The bureau shall keep an official record of its procedures, a part of which record shall consist of a register of all applicants for certificates under this act, all certificates issued and to whom, and of all certificates revoked, together with any action of the bureau in reference to any of said matters and through its secretary shall make an annual report to the governor showing its receipts and disbursements, general financial status and such other facts as are necessary for a complete understanding of the operation of the bureau.

6. The bureau shall file in the month of January of each year in the office of the county clerk of every county in this state a list of persons then holding valid and unrevoked doctor of medicine (M. D.) certificates theretofore issued by the bureau and a list of all persons whose certificates have been revoked, during the preceding year.

7. The bureau shall compile and publish annually a complete directory giving the names and addresses, educational attainments and specialties, if any, practiced by each doctor of medicine (M. D.) licensed by the bureau.

8. All fees collected by or on behalf of the bureau and all its receipts of every kind and nature shall be reported by the bureau at the beginning of each month for the month preceding to the state controller and at the same time the entire amount shall be paid into the state treasury and shall be credited to a fund to be known as the doctor of medicine (M. D.) bureau of licensure contingent fund, which fund is hereby created. Such contingent fund shall be for the use of the doctor of medicine (M. D.) bureau of licensure and out of it but not otherwise shall be paid all expenses of the bureau.

9. The bureau shall have power:

(a) To adopt a seal which shall have inscribed upon it the following: "The Doctor of Medicine (M. D.) Bureau of Licensure, State of California," with such appropriate design as the bureau may select.

(b) To adopt from time to time such rules and regulations as the bureau may deem necessary for the performance of its work.

(c) To issue and revoke doctor of medicine (M. D.) certificates and to examine applicants therefor as herein provided.

(d) To summon witnesses and to take testimony in any matters pertaining to its duties and each member shall have power to administer oaths and take affidavits.

(e) To pay the actual expenses of the members of the bureau in connection with official business.

(f) To fix and authorize a salary to its secretary in such sum per month as the remaining members of the bureau shall from time to time fix and determine, and the governor approve, and to employ and compensate such clerks and other assistants as are necessary to carry out the provisions of this act, provided the fees and other receipts of the bureau are sufficient to meet the expense and provided the same is approved by the governor.

(g) To require licentiates of the bureau to furnish such information as is necessary to enable it to compile adequate records and to prepare the directory herein elsewhere provided for, upon blanks furnished by the bureau.

(h) To charge and collect a fee of fifty dollars from every applicant for a license hereunder, except as herein otherwise provided.

(i) To do any and all things necessary or incidental to the exercise of the powers and duties herein granted or imposed.

Sec. 3. 1. The doctor of medicine (M. D.) bureau of licensure shall issue one form of certificate only which certificate shall be known as the "doctor of medicine (M. D.) certificate." Said certificate shall entitle the holder to practice medicine and any and all of its specialties including the prevention and treatment of any and all kinds of infirmities, injuries and mental and physical diseases and conditions of human beings, as a doctor of medicine. The doctor of medicine (M. D.) bureau of licensure shall issue such certificate after examination in its discretion as herein provided and only to persons holding the degree of doctor of medicine from an institution of learning the requirements of which at the time of conferring such degree were in no particular less than those prescribed by the association of American medical colleges or the council on medical education and hospitals of the American Medical Association provided such person furnishes the bureau satisfactory evidence of good moral character and good ethical and professional standing, and meets the further requirements for licensure as herein provided; and,

2. The bureau in its discretion may issue such doctor of medicine (M. D.) certificate without examination to any applicant who is the holder of such doctor of medicine (M. D.) degree as herein described and who possesses such qualifications for doctor of medicine (M. D.) certificate as are herein provided for.

3. Every applicant for such doctor of medicine (M. D.) certificate, except as hereinafter expressly provided, shall pay to the secretary of the bureau a fee of fifty dollars.

4. All applications for such doctor of medicine (M. D.) certificate shall be in writing and signed and verified by the applicant and filed with the bureau thirty days before any action is taken by it thereon, and upon a form to be furnished therefor by the bureau, which form

shall among other things require the full name of the applicant, his residence, age which must not be less than twenty-one years, education, training, his diploma conferring upon him the degree of doctor of medicine (M. D.), hospital experience which shall not be less than one year in a hospital, the service of which, at the time of such experience, was in no particular less than that prescribed by the council on medical education and hospitals of the American Medical Association, or one year's experience or scientific study deemed by the bureau equal to such period of hospital experience, and information on previous professional and business affiliations and such other data regarding his moral character and ethical and professional standing and attainments as the bureau shall prescribe. If such verified application discloses on its face that the applicant is not qualified to receive the certificate herein provided for, the bureau may refuse to consider such application or to examine such person further.

5. The bureau shall hold examinations on the third Tuesday of January and the third Tuesday of June in each year at such places as it may designate and at such other times and places as it may from time to time determine.

6. All examinations conducted by the bureau shall be practical in character designed to ascertain the applicant's fitness for practicing medicine as a doctor of medicine, shall be in the English language and shall be wholly or in part in writing, at the discretion of the bureau and shall include the subjects embraced within the curriculum of these institutions of learning conferring the degree of doctor of medicine (M. D.) the requirements of which at the time of such examinations are in no particular less than those prescribed by the association of American medical colleges or the council on medical education and hospitals of the American Medical Association. Provided, further, that the bureau shall issue said doctor of medicine (M. D.) certificate without examination to any person who is now and has been for more than five years prior to the passage of this act a citizen of this state and legally licensed to practice and practicing medicine or any of its recognized specialties continuously for said period in this state and who holds the degree of doctor of medicine, and applies to this bureau within six months after the passage of this act for such doctor of medicine certificate, and shows to the satisfaction of this bureau that he possesses good moral character and good ethical and professional standing, and upon payment of a fee of ten dollars.

Sec. 4. 1. The bureau shall have power to revoke any doctor of medicine (M. D.) certificate theretofore granted by it to any person who after the hearing herein provided for shall be found by the bureau to have been guilty of any of the following:

(a) The employment of fraud or deception by the applicant in applying for or securing the certificate or in passing the examination provided for by this act.

(b) Conviction of a felony or a crime involving moral turpitude.

(c) The procuring, agreeing to procure, aiding or abetting in procuring or attempting to procure a criminal abortion.

(d) Wilfully betraying a professional secret.

(e) Habitual intemperance in the use of narcotics, other than habit-forming drugs, alcoholic liquors or stimulants.

(f) The practice of medicine under a false or assumed name or the impersonation of another licentiate under this act.

(g) Causing the publication, circulation, exhibiting or displaying publicly of any advertisement, or giving notice or information, or prescribing or using any medicine or means purporting to regulate the monthly periods of women or purporting to re-establish suppressed menses or purporting to control or prevent the birth of children, or relative to the treatment, alleviation, palliation, cure or prevention of any disease, weakness or condition of the sexual organs, such as prejudicially to affect morals and public health.

(h) Soliciting, demanding or accepting discounts, commissions, rebates in money or anything of value from any person, firm or corporation operating or conducting drug stores, or optical stores, or druggists, opticians, technicians or other persons licensed to practice the healing art, as a consideration for referring patients to such person, firm or corporation to secure drugs, prescriptions, goods or merchandise or services.

(i) Publicly advertising or holding himself out to the public by any means, as having special ability to treat or cure chronic or incurable diseases by secret or unscientific methods.

(j) Employing solicitors, cappers, runners, drummers or agents or subsidizing or paying discounts, commissions, rebates in money or anything of value to any hotels, boarding houses, laboratories or drug stores, firms or corporations, technicians or other persons licensed to practice the healing art to procure patients.

(k) Continuous gross negligence and malpractice in the care and treatment of patients.

(l) The violation of any provision of this act.

2. The bureau or any citizen of this state may file with the secretary of the bureau a sworn complaint charging any licentiate under this bureau with the commission of any one of the foregoing acts and petition that the license theretofore granted to such person be revoked. Upon the filing of such verified complaint with the secretary, the secretary shall serve a copy thereof upon the person so accused, together with a notice fixing a time and place of hearing, which time and place shall be fixed by the bureau and shall not be less than thirty days nor more than ninety days from the date of service of such notice when and where said bureau will conduct a hearing thereon and that such person may be present in person and by attorney if he so desires and may offer evidence and be heard in his defense. At the time and place so fixed for hearing before the bureau, as hereinabove specified, or at any time or place to which the matter may be continued and with the consent of all parties interested said hearing may be continued for more than ninety days; the bureau shall receive evidence in support of such complaint and from the person accused in reply thereto and shall accord the person against whom charges are preferred a full and fair opportunity to be heard in his defense. The person making such complaint, the person accused or the bureau or any member thereof may compel the attendance of witnesses at such hearing or hearings by subpoena issued by the secretary of the bureau under its seal. Depositions of witnesses may be taken in such matters in the same manner as in civil cases and all the statutes in force as to taking of such depositions and the issuance and service of subpœnas shall be applicable.

3. The action of the doctor of medicine (M. D.) bureau of licensure in refusing to grant or in revoking any doctor of medicine (M. D.) certificate may be reviewed by the supreme court of this state or by the district court of appeal for the district in which such applicant or licentiate resides and not otherwise. In all such review proceedings the bureau shall be represented by the attorney-general of this state.

Sec. 5. The bureau may, in its discretion, enter into and establish reciprocal relations with bureaus, boards, committees or departments representing other states which bureaus, boards, committees or departments are authorized and empowered to issue doctor of medicine (M. D.) certificates based upon the applicants holding the degree of doctor of medicine (M. D.) from an institution of learning whose requirements at the time of conferring such degree were in no particular less than those prescribed by the association of American medical colleges or the council on medical education and hospitals of the American Medical Association.

Sec. 6. 1. Any person who is not the rightful holder of a valid and unrevoked doctor of medicine (M. D.) certificate issued by the bureau, who holds himself out or advertises or represents himself in any manner to the public, or to any sick person to be the holder of such certificate, or who displays in his office or otherwise a false or forged doctor of medicine (M. D.) certificate or such certificate illegally obtained, or who impersonates, or in any manner represents himself to the public or any sick person to be any doctor of medicine (M. D.) to whom a certificate has been granted by the bureau, shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than one thousand dollars nor more than ten thousand dollars, or by imprisonment for not less than six months nor more than five years, or by both such fine and imprisonment.

Sec. 7. It shall be the duty of the several district attorneys of this state to prosecute all persons charged with the violation of any of the provisions of this act. It shall be the duty of the secretary of the bureau under the direction of the bureau, to make investigations and gather information for the efficient enforcement of this act.

Sec. 8. This act shall be known and cited as the "doctor of medicine (M. D.) bureau of licensure act."

PROTECTING THE TITLE "DOCTOR"

Senate Bill No. 331 now before the legislature reads as follows:

An act to protect the public from misrepresentation, imposition and fraud of advertising "doctors" by regulating the use of printing, publishing or any form of advertising of the words, and letters and abbreviations and titles of "doctor," "Dr.," "physician," "physician and surgeon," "surgeon," "M. D.," "D. C.," "D. O.," "N. D.," "Opt. D.," "D. S. C.," "Ph. C.," "Ph. D.," or any like title, abbreviation or appellation indicating that the user holds himself out as possessing knowledge, skill or power to treat any physical or mental ailment of human beings, imposing penalties for the violation thereof, and repealing all acts and parts of acts in conflict herewith.

The people of the State of California do enact as follows:

Section 1. It shall be unlawful for any person who holds himself out as competent to treat the sick or afflicted in this state or as having knowledge, skill or power to treat, relieve or cure any physical or mental ailment of human beings to use the words, letters, abbreviations, appellations or titles "doctor," "Dr.," "physician," "physician and surgeon," "surgeon," "M. D.," "D. C.," "D. O.," "N. D.," "Opt. D.," "D. S. C.," "Ph. C.," "Ph. D.," or any like words, letters, titles, abbreviations or appellations on office doors, institutes, sanitariums, residences, windows, billboards, electric signs, banners, theatre curtains, movie screens, posters, placards, decalcomanies, engravings, pictures, paintings, circulars, letters, cards, handbills, or in newspaper, periodical or any other medium of advertising without accompanying the title "doctor," "Dr.," "physician and surgeon," "physi-

cian," or "surgeon," with words or letters showing the educational qualifications, attainments of such person and the degree upon which it is based. Such letters or titles are, namely, M. D., D. O., D. C., Ph. D., Ph. C., and like letters or titles, which shall be accompanied also by the name of the school, college or university that conferred the degree, or the approved abbreviation of the name of the school, college or university that conferred the degree and followed by the name of the state licensing or examining board that issued the license held by such person to practice in California.

Sec. 2. Nothing in this act shall be construed to authorize foreign or itinerant "doctors" or any person not licensed by the laws of this state to advertise to treat the sick by mail or otherwise.

Sec. 3. Any person who violates any of the provisions of this act shall be guilty of a misdemeanor and upon conviction thereof shall be punished by a fine of not less than fifty and not more than two hundred dollars or by imprisonment in the county jail for not less than thirty days nor more than ninety days or by both such fine and imprisonment.

Sec. 4. It shall be the duty of the several district attorneys of this state to prosecute all persons violating any of the provisions of this act.

Sec. 5. All acts and parts of acts in conflict with this act are hereby repealed.

Sec. 6. This act shall be known and cited as the "act to protect the public from misrepresentation, imposition and fraud of advertising doctors."

The San Francisco Examiner discusses this proposed law editorially under the title of "Guarding a Title" as follows:

"The title 'doctor,' has come to have a definite meaning, when used by men and women engaged in the profession of healing. It has usually had the connotation of M. D., 'doctor of medicine.'

"Its value arises out of the work its possessor had to perform in order to earn it.

"When the title begins to be used promiscuously by men and women whose educational qualifications are known to be inconsiderable, and are *not* doctors of medicine, it becomes cheapened.

"To guard against cheapening an appellation for which the doctor of medicine has had to undergo an enormous amount of work and training, a bill has been introduced at Sacramento by Senator Hurley laying down regulations under which it may be used.

"The bill provides that when the 'Dr.' title is used, in printed matter, the name must be followed by the initials indicating the authority for the title, as M. D., D. O., D. C., and the name of institution by which the title was conferred.

"The bill seems a sensible and honest proposal. It will hurt no one except those trying to parade under false pretenses. And these should be hurt.

"The legislature should pass it."

THE PROPOSED RADIOGRAPHERS' LAW

Assembly Bill No. 478 before the legislature is designated:

An act to promote the better education of practitioners of radiography; to provide for the issuance of certificates of registration as registered radiographers to qualified applicants by the state board of health; and to provide penalties for the violation hereof.

Excluding certain routine features of organization and administration, the principal features of the bill are:

Section 1. For the purposes of this act radiography is defined to be a group of diagnostic and physical procedures to be prescribed by legally licensed doctors of dentistry and those legally licensed under the laws of the State of California to diagnose and treat the sick or afflicted (legally licensed doctors of dentistry and those legally licensed under the laws of the State of California to diagnose and treat the sick and afflicted are hereinafter in this act referred to as doctors; and where the term doctor is used, it means legally licensed doctors of dentistry, and those legally licensed under the laws of the State of California to diagnose and treat the sick and afflicted), and carried out according to such doctors' direction by persons registered under this act.

The diagnostic and physical agencies and activities included for purposes of this act under the general term of radiography are:

Radiography of the human anatomy by means of the Roentgen ray or other photographic processes as an aid for diagnosis of the diseases or deformities of the human body;

Localizing foreign substances in the human body by means of the Roentgen ray.

Interpretation of the findings of the photographic plates, films or other impressions, said interpretation to be made only to a doctor;

Radioscopy, or the examination of the deep structures of the human body by means of the fluroscope, this work to be done only upon the written prescription of and under the supervision of a doctor.

Sec. 2. No person shall be entitled to practice radiography in the State of California, except a doctor, unless a certificate shall have been issued to him as provided in this act.

Nothing herein contained, however, shall prevent a doctor or person licensed under this act from employing assistants who shall work under the supervision of such doctor or licensee under this act.

Sec. 3. Within thirty days after the passage of this act the state board of health shall establish and maintain a department of examination and certification of registered radiographers as hereinafter provided. Said examination shall be conducted twice a year by a committee of three examiners, one of whom must be registered under this act, appointed by the state board of health, under such rules and regulations as may be prescribed by said board. Each applicant shall be a citizen over the age of twenty-one years, and shall pay a fee of fifty dollars ($50), which will in no case be returned to the applicant. Due notice of examination shall be given in such manner as shall be prescribed by the board of health. The examination shall be practical in character, and designed to ascertain the applicant's fitness to practice radiography, and shall be based upon the equivalent of the following preparation by the applicant: the completion of a four year high school course, besides

Anatomy, osteology, physiology	500 hours
X-ray physics and X-ray chemistry	300 hours
Technique (including topographical anatomy and plate reading)	500 hours
Ethics and principles and practice of radiography	200 hours
	1,500 hours

The application for permission to take the examination shall be supported by affidavits or other evidence showing that the applicant has completed the prescribed work.

Sec. 4. The board shall issue to each applicant successfully passing this examination a certificate showing the applicant's qualification to practice radiography under the provisions of this act.

Sec. 5. It is further provided that any person over twenty-one years of age, who is a resident and citizen of the State of California at the time of the passage of this act, and engaged in the practice of radiography as a business or for hire, must be granted a certificate as a registered radiographer without taking an examination; provided, such application shall be made within six months of the passage of this act, and that such application be accompanied by credentials of character, together with the affidavits of two doctors showing continuous training and experience of more than one year prior to the passage of this act, together with a license fee of fifty dollars.

Sec. 6. All persons who have been duly licensed in accordance with the provisions of this act shall be known and styled as registered radiographers, and may use the words "registered radiographers" after their names.

A law of this same general character was passed by the last legislature, but the League for the Conservation of Public Health presented convincing reasons to the Governor and the bill was vetoed.

Everyone will agree that some sort of regulation should govern the use of the Roentgen ray. It is one of the essentials in diagnosis and treatment of diseases. But it is exceedingly dangerous and growing more so with development in the manufacture of the machines, some of which now use 300,000 volts of electricity. The proposed law does not insure the public the protection it should have.

The "blanket" provision of the act is a very inclusive one, requiring "registration" without examination of all persons now using X-rays in the State. No one apparently knows how many per-

sons there are of this class in the State, but judged by the sales of X-ray machines, number of advertisements and other available data, they can surely be counted by thousands.

Under the act, any person licensed to practice the healing art by any method can prescribe the use that is to be made of X-rays. A licensed drugless healer who has the most limited education can himself administer or prescribe any and all the dangerous X-ray procedures employed in the diagnosis and treatment of disease. It may be said with truth that this may be done now, due to the absence of any law. However, it is quite another matter to put the approval of the state upon some of these situations.

The act also provides for the licensing as "Registered Radiographers" of a group of technicians who can do X-ray work only under direction of some person licensed to practice the healing art. These technicians should be regulated, but the educational and other licensure requirements of both those who are authorized to prescribe X-rays and those who are to carry out the prescription should be much higher than is proposed in Assembly Bill No. 478.

PROPOSED AMENDMENT TO WORKMEN'S COMPENSATION AND INSURANCE ACT

Senate Bill No. 294 now before the legislature is:

An act to amend section sixteen of the "workmen's compensation, insurance and safety act of 1917," approved May 23, 1917, to provide for the creation of two medical referee boards to pass upon the cause and extent of disability and the adequacy of treatment of injured employees and the cause of death in death cases arising under said act.

This law obviously must be radically amended to make it acceptable to the medical profession or those whom they serve..

We urge every member of the State Medical Society to carefully study this bill and send us any constructive suggestions for proper amendment therof.

DEPARTMENT OF PROFESSIONAL STANDARDS AGAIN

Assembly Bill No. 442 now before the legislature is very similar to the bill for the same purpose that was defeated upon information furnished by the League for the Conservation of Public Health at the last legislature.

Briefly, the law proposes to remove the control of licensure, discipline and revocation of license of the members of various "professions" from boards composed of members of these "professions" and to place the duties and responsibilities of all of these boards in the hands of a person not practicing any of these professions and who, therefore, probably will not be overly well versed in the requirements of the situation. The standard of honesty, integrity and efficiency of the new director of standards, or of the present boards, is determined by the judgment, largely, of the Governor, who makes the appointments in either case and can terminate the services of any of them for cause.

The costs of operating most if not all of these boards is borne by a special tax for the purpose levied upon licentiates. For physicians, this special tax is two dollars a year. It may be confidently predicted that this tax will cause even more strenuous protest under the proposed law than exists under present conditions.

Control over licensure and discipline of the men who, among other things, control the prescribing and dispensing of alcohol and habit-forming drugs is a most important responsibility. The man who has this responsibility and also that of controlling the licensure of professions dealing with health is going to have many problems and temptations, and he ought to be one to command much more than the salary of $4000 allowed in the proposed law.

If this law is placed upon the statute books of California, it will invite the same sort of scandal, political graft and inefficiency that followed the development of the laws upon which it is modeled elsewhere.

The main features of the law are shown in the following abstracts:

365. A department of the government of the State of California to be known as the department of professional standards is hereby created. The department shall be conducted under the control of an executive officer to be known as director of professional standards, which office is hereby created.

365b. The director shall have power to issue licenses to practice for all professions included in this article for which licenses are required by law and to suspend or revoke licenses heretofore or hereafter issued for cause as prescribed by law. He shall not be a practitioner of any of the professions under his jurisdiction. . . .

365c. The director of the department of professional standards, except as in this article otherwise provided, shall succeed to and is hereby invested with all the duties, powers, purposes, responsibilities and jurisdiction of the state board of accountancy, state board of architecture, board of dental examiners of California, state board of embalmers of the State of California, state board of library examiners, board of medical examiners of the State of California, state board of optometry, state board of pharmacy, state board of examiners in veterinary medicine, and of the several officers, deputies and employees of such bodies and offices. . . .

365d. The director of the department of professional standards is hereby invested with the power and is charged with the duty of administering and enforcing all laws now or hereafter imposing any duty, power, or function upon any of the bodies, offices, officers, deputies or employees herein transferred to said department.

CHIROPRACTIC BOARD APPOINTED

After "refereeing the fierce battle waged by fifty-four applicants" for positions on the Chiropractic Board for thirty days, the Governor has appointed James P. Compton, Oakland, for a three-year term; J. B. Edgerton, Banning, for three years; Ray S. Labarre, San Francisco, for two years; W. A. Messick, Los Angeles, for two years, and Albin Peterson, Los Angeles, for one year.

In naming the board, Governor Richardson issued the following statement:

"The appointment of the Chiropractic Board is the most difficult job I have undertaken since assuming office. Preparing the budget and listening to the outcry of those who will be painlessly removed from the payroll has had its incidents of amusements, but chiropractic is a serious proposition.

"The initiative law adopted in November provided that the Governor should appoint a chiropractic board of five members, no two from any one school of chiropractic, and not more than two from any county.

"My predecessor, after six weeks' study of the

question, passed it along to me. I have spent thirty days trying to referee the fierce battle which has been waged by fifty-four applicants, their friends, and various chiropractic schools and numerous societies.

"If the files of letters I have received showing the opinion of chiropractors of each other should be published, the legal fraternity would have a busy time with libel suits.

"The fight between the chiropractic schools has been intense, and as there are only five appointments to be made and at least a dozen leading schools exist, all could not be satisfied.

"The law provides that all chiropractors in the State must be examined by the new board except the board members themselves. There is great fear on the part of some chiropractors that the board might be too rigid and refuse licenses to many now practicing.

"It has been my purpose to appoint a board that will deal fairly and justly and still maintain a reasonably high standard of educational requirement. The law says the Governor may remove a member from the board after sufficient proof of inability or misconduct.

"I feel that the board I have appointed will be satisfactory to the chiropractors as soon as it is in operation. I have been guided in my conclusion by the wishes of the majority of chiropractors of the State. Those I have appointed are recommended by the majority of the men who conducted the campaign for the chiropractic bill and by the oldest and leading chiropractic societies."—(S. F. Examiner, Feb. 11, 1923.)

"PATENT MEDICINE" SECRECY—A TARDY ADMISSION

For years the medical profession has insisted that the real reason that nostrum makers keep the composition of their products secret is (1) for the glamor that such secrecy throws around them and (2) the fact that so long as the public does not know what is in a preparation the advertiser's imagination is given freer play. The unknown is always awe-inspiring. The "patent medicine" makers, on the other hand, have stoutly maintained that their reason for keeping the composition of their product secret is that the formula is personal property and, if it were made known, the market would be flooded with imitations, and their property destroyed. Now comes the mouthpiece of the "patent medicine" people, Standard Remedies, with the tardy admission that the medical profession is right and their own constituents wrong. Says this publication in an editorial, "Formulae and Secrecy":

"It should be remembered that while a developed formula has a great value, it is the trade name, the advertising, the merchandising skill applied in connection with it that creates its valuable good will. Ten to one a thorough search through books of formulae will reveal that your own is already known to the medical world. But no one can get the same benefit from it that you have gained unless they spend in merchandising it the same money you have spent."

Elsewhere in the same editorial Standard Remedies admits that "the ingredients of some of the biggest selling proprietary medicines are duplicated in one way or another by imitators. Usually without profit." In other words, as the Journal has iterated and reiterated, the composition of the average "patent medicine" is usually the least commercially valuable thing about it. The real thing of commercial value is the name, which the manufacturer protects by a perpetual monopoly granted under the trade-mark law. Pink dish-water could be put on the market under some fancy name (trade-marked) and by persistent and insistent advertising built up into a large property. If it were nothing but pink dish-water, only advertising, of course, could keep it alive. Add a stiff dash of spiritus frumenti, or some equally intriguing drug, to the mixture and the composition alone might keep it moving after momentum had been given it by advertising. The claim long made by "patent medicine" makers that they had to keep the composition of their nostrums secret in order to protect themselves is buncombe because every "patent medicine" maker knows what Standard Remedies admits, that his preparation can be analyzed by any good chemist and duplicated. Now that the "patent medicine" people themselves acknowledge that the real commercial value of their products lies in the "development" that has been brought about by advertising, there is no longer any reason for our timid lawgivers shying at every "open formula" bill that may be introduced for the purpose of giving the drug-taking public a modicum, at least, of protection.—J. A. M. A.

The True Physician.—The following tribute to the doctor, which appeared in the Boston Transcript and was republished in the A. M. A. Bulletin, fits well the true physician who, through scientific study and work, and by adherence to the truest ideals of his profession, develops himself to the limit of his capacity for helpful service to humanity and then delivers that service to those who need it in the most effective manner possible.

"The doctor is altogether a special kind of person. His illusions are few; his inside information is enormous, and if, now and then, he wears a superior smile, forgive him; he has probably just heard some remark which he knows to be fatuous or hypocritical. Again, his jokes are likely to be a bit technical and his views of life materialistic, but if he has a brand of idealism you can put your trust in it, for he has learned it in a hard school, and it is genuine.

"The lawyer we take into our confidence when we get good and ready; the clergyman we admit to our parlor and dining room; but the doctor goes into the bedroom unannounced. He goes in at a time when the house, temporal and spiritual, has not been set to rights for his reception, and if what he sees there surprises him he seldom lets it be known. In the healing of bodies he has opportunities for healing souls which never come to a priest, and with which many a priest could not deal. He is the lay father-confessor, regardless of creed. In cities, his clubabilities are famous, he always fits; and clubs are just full of him. He is a safe man on committees; he can turn his hand to any public business and, if let alone, discharge it creditably. He knows more psychology in five minutes than the philosopher does in a week, and he is withal the least emotional of men. The peculiar thing about him is that while fighting his grim and silent battle with death without the applause of a crowd, often without pay, and sometimes even without gratitude, he seems superior to all these considerations. He is responding to a higher sort of noblesse oblige which is almost unintelligible to the average man, out for the average prizes. Compared with the impetuosity of military men, the ecstacies of religious leaders, and the silent fortitude of starving artists, the frozen enthusiasm of the doctor is a very curious manifestation. It may be something in the training he gets, for, no matter what the youngster may have been, if he has anything in him, it will go hard if his practice as a physician does not bring it out. And to him belongs the final reward of service, which is the increased opportunity to serve."

COUNTY NEWS

ALAMEDA COUNTY

Alameda County Medical Association (reported by E. S. De Puy, secretary)—The Alameda County Medical Association held its regular monthly meeting January 15, at which time the following officers were declared elected: Pauline S. Nusbaumer, president; Charles McVey, vice-president; E. Spence De Puy, secretary-treasurer. The new council consists of Charles Coleman, A. Galbraith, A. M. Meads, George Rothganger, D. N. Richards, George G. Reinle.

The following scientific program was presented by the staff of Providence Hospital:

The Etiology of Diseases of the Kidneys, by C. T. Devine.

Eye Findings in Diseases of the Kidneys, by Frank S. Baxter.

Kidney Function Tests, by George G. Reinle.

Blood Chemistry of the Nephritidies, by Eugene H. Barbera.

Diseases of the Kidney in Pregnancy, by C. A. De Puy.

Pyelonephritis in Children, by W. A. Wood.

Applicants for membership were N. N. Ashley and Bowles E. Rosenthal.

Baby Hospital Holds Annual Meeting—At the annual meeting of the Baby Hospital in Oakland, the following officers were elected: Board of Managers, Mrs. George Jensen, president; Mrs. J. George Moore, first vice-president; Mrs. Frederick Magee, second vice-president; Miss Edith Dunning, third vice-president; Mrs. William Cavalier, recording secretary; Mrs. Charles J. Youngberg, treasurer; Mrs. Frederick Magee, corresponding secretary. Officers of the various committees, board of managers, auxiliary board of managers, and board of directors were also elected.

CONTRA COSTA COUNTY

Contra Costa County Medical Society (reported by L. St. John Hely, secretary)—The regular monthly meeting of the Contra Costa County Medical Society was held January 27 at the Hotel Los Medanos, Pittsburg, the society being the guest of Dr. Marks.

After the transaction of routine business, Hans Lisser of San Francisco delivered a very interesting lecture, illustrated with lantern slides, on the subject of "Ductless Glands."

FRESNO COUNTY

Fresno County Medical Society (reported by John D. Morgan, secretary)—Regular meeting of Fresno County Medical Society was held February 6, 1923, at the General Hospital of Fresno County. Those present were: Aller, Anderson, Avery, Barrett, Bell, Couey, Cowan, Cross, Doyle, Craycroft, Deiderich, Ellsworth, Goldberg, James, Jamgotchian, Jorgensen, Konigmacher, Kjaerbye, Lamkin, Larson, Madden, Manson, Miller, Montgomery, Mitchell, Morgan, Milholland, McPheeters, Pettis, Schiro, Schottstead, Sciaroni, F. W. Smith, T. D. Smith, Staniford, Scarboro, Thompson, Tillman, Tupper, J. R. Walker, G. W. Walker, Webster, and Wilson.

Visitors were: Dearborn of Madera; H. O. Collins, Director of General Hospital Fresno County; Eckhard, Pathologist at General Hospital; Matchke, Stewart, Fate, and Glidden, internes at General Hospital.

Herbert C. Moffitt of San Francisco was the speaker of the evening and presented a paper on "Clinical Types of Chronic Spenomegaly."

H. O. Collins entertained Dr. Moffitt and members of the staff of the General Hospital at luncheon on the day of the society meeting. This was followed by a very interesting clinic by Dr. Moffitt.

Staff of Fresno County Hospital Holds Annual Meeting—At the annual meeting of the staff of Fresno County Hospital L. R. Wilson was elected president of the organization, J. D. Morgan, vice-president, and F. P. Bell, secretary.

Okongi Sanitarium—It is reported that Dr. B. Okongi has completed his new sanitarium at E and Mono streets, Fresno, at a cost of $35,000. The building is a one-story structure containing forty private rooms and one three-bed ward.

HUMBOLDT COUNTY

Humboldt County Medical Society (reported by L. A. Wing, secretary)—The society met at Eureka, with twenty-two members present. W. C. Alvarez and Carl L. Hoag of San Francisco were guests of the society. Alvarez gave a paper on stomach and bowel conditions, illustrated with lantern slides; and Hoag presented a paper on conditions of goitre, also illustrated by lantern slides.

The following officers were elected for the ensuing year: S. N. Jorgensen of Fortuna, president; O. R. Myers, Samoa, vice-president; John A. Lane, Eureka, treasurer; L. A. Wing, Eureka, secretary. Delegates to the State meeting will be E. L. Cottrell, Scotia; alternate, John N. Chain, Eureka. George B. Brown of Eureka and O. R. Myers of Samoa were elected to membership in the society. Preceding the business and scientific meeting a banquent was served.

KERN COUNTY

New Hospital for Taft—The Pacific Oil Company has secured permission to build at once a $15,000 hospital at the corner of Center and Eighth streets in the city of Taft. The hospital will be for the care of the company's employes exclusively, and will be operated by the physicians of the medical department of the Pacific Oil Company.

LOS ANGELES COUNTY

Methodist Hospital of Southern California—The December report of this hospital shows 3246 patient days service. There were 88 major and 48 minor operations; 48 births and 9 deaths. Twenty patients were served at less than cost to the hospital and 16 without paying anything at all. The free work of the institution, expressed in money, was $632.30, and $417.75 worth of service was given to employes. A total of work at the expense of the hospital and not paid, of $1445.63, was a very creditable showing for a hospital of this size.

Total receipts for the month were $21,691.93 and the expenditures were $27,080.27. Average cost per patient per day, $6.25.

Santa Fe Hospital in Los Angeles to be Replaced—It is announced that the Santa Fe railway system is considering plans to reconstruct the present Santa Fe Hospital by sections so that in a short space of time the present building will be replaced by a more modern and commodious structure.

Merrill Corporation Hospital at Glendale—It is reported that excavation has been completed for the new class "A" hospital—whatever they may mean by that term—on Glendale boulevard, near Waverly. The building will be of reinforced concrete, three stories, 100 x 45 feet, and will cost $65,000.

MENDOCINO COUNTY

Fort Bragg Hospital Changes Hands—It is reported that Dr. Campbell has disposed of his interest in the Fort Bragg Hospital and will locate in San Francisco. It is understood that Dr. Bowman has purchased the hospital and will reorganize and enlarge it.

MONTEREY COUNTY

Monterey County has appointed Dr. B. T. Tally as county health officer upon a full-time basis. It is reported that the International Health Board is subsidizing the health program for Monterey County, and its new health officer, Dr. Tally, formerly practicing physician in North Carolina, was selected by Dr. Farrell of the International Health Board for this position, replacing J. A. Beck, former county health officer.

ORANGE COUNTY

Orange County has adopted the full-time health department, reorganized its health department, and appointed Dr. W. Leland Mitchell as full-time health officer.

RIVERSIDE COUNTY

Riverside County Medical Society (reported by Thomas A. Card, secretary)—The regular meeting was held January 8 at the Mission Inn, where a banquet was given in honor of John C. King, who has recently retired from active practice. Thirty members of the society, with their guests, paid tribute to Dr. King's long and honored career as a physician and citizen, during which he was most prominent in the work of building up the aims, ideals, and organization of his profession in this community and State.

The roll-call of the charter members was read: three of the surviving members, James G. Baird, C. S. Dickson, and W. B. Payton, all of Riverside, were present. Their reminiscences of the early years of the society were very interesting. W. W. Beckett of Los Angeles spoke of the men of Southern California, who, twenty-five years ago, were the leaders in medicine and surgery. His address was very interesting and inspiring.

Dr. King was elected to honorary membership in the county society, and Paul E. Simonds proposed the formation of a medical library to be known as the John C. King Memorial Library.

L. K. Kinghton was recently appointed on the city health department.

Elsinore Sanitarium—According to press dispatches, Dr. M. A. Schutz is building a new addition to Elsinore Sanitarium. The building will be one hundred feet long by twenty-two feet wide, will be of hollow tile construction, and will cost $10,000.

Kvello Hospital Opens—O. A. Kvello, M. D., has established a hospital at Hemet. A residence has been converted into an eight-room, private bed hospital.

SAN DIEGO COUNTY

San Diego County News (reported by Robert Pollock)—San Diego's infant mortality for 1922 of ninety-one deaths of infants under one year of age is a fine showing. This is equivalent to forty-eight deaths per thousand children born alive. In a report covering 519 cities in the United States, population from fifty thousand to one hundred thousand, this record gives San Diego third place. An enviable position indeed.

George Dock of Pasadena delivered an address on January 27 on "Diseases of the Heart," before the monthly staff meeting of the Naval Hospital in Balboa Park. Members of the medical society, to the number of about fifty, attended this meeting, and the paper, as well as the discussion which it called forth, were thoroughly enjoyed. Captain Wieber and his medical staff have the right idea in supplementing their scientific session with a discussion of a dietary menu in one of their social halls. Nothing contributes more to good fellowship among humans, including medicos, than the buffet lunch.

The annual meeting for election of officers of the San Diego County General Hospital staff was held Monday evening, February 5. The officers elected for 1923 were: President, M. C. Harding; vice-president, Joseph F. Grant; secretary, L. H. Redelings. The staff, at the same meeting, adopted a new constitution and by-laws and set of regulations for the hospital.

The Sisters of Mercy, of St. Joseph's Hospital, on January 30 gave a dinner to the medical staff at the Maryland Hotel. Following the dinner brief talks on constructive ideas for the betterment of the work in the hospital were given by T. O. Burger, M. C. Harding, H. A. Thompson, J. E. Jennison, and Lyell C. Kinney.

SAN FRANCISCO COUNTY

Proceedings of the San Francisco County Medical Society (reported by J. H. Woolsey, secretary)—

The meeting of January 9 was a Pasteur memorial meeting. All papers are published in full in this number of the Journal.

At the Committee on Surgery meeting of July 16, J. F. Cowan read a paper on "The Etiology of Ununited Fractures." The Committee on Urology met January 30. Sidney Olsen was elected chairman and M. B. Wesson, secretary of the committee. "Beyronie's disease" was discussed by John G. Cheetham of Portland, Ore. "The Treatment of Ureters Following Nephrectomy for Tuberculosis" was the subject of L. R. Reynolds' paper.

The Eye, Ear, Nose, and Throat Section Met January 23, E. F. Glaser Presiding (reported by Frederick C. Cordes, secretary)—Victor Lucchetti presented a patient, who, two years previously, had one eye enucleated because of fear of sympathetic ophthalmia, and now had symptoms of loss of vision.

Hans Barkan presented a preliminary report on cataract extractions in the Vienna Clinic. Two hundred and forty-nine cataract cases were operated on by Meller in the Vienna Clinic between 1918-1922. The first fifty patients of this series were operated on immediately after the war. The patients were in poor physical condition, and between sixty-five and seventy-five years of age. New instruments were not obtainable and sterilization was done by means of oil lamps. In addition, there was no heat in the buildings, so that technical difficulties were marked. For the most part, the Hess operation was used. The results were very good, the percentage of complications being small. This is the more remarkable when one considers the difficulties under which Meller worked. In performing the operation three points were emphasized: (1) A large capsulotomy covering the entire pupillary area; (2) operating without a speculum; (3) did not emphasize the removal of cortical debris.

Pischel, in discussing the paper, laid special stress upon the necessity of the proper capsule forceps; while W. S. Franklin emphasized the reliability of the statistics presented. Nutting stated that, in reviewing Parker's cases in Detroit, he found fewer prolapses of iris after atropine had been used. Otto Barkan pointed out that Hess always used atropine, and Meller did not, and yet Meller had fewer prolapses, due to better post-operative care. The above paper will be published in full at a later date.

Leo Eloesser read a paper on plastic surgery of the face, stating that one can not produce an ideal face by plastic surgery. Experimentally, it has been shown that in the transplantation of free grafts into scar tissue the nerves regenerate, but the lymph vessels do not, so that as a result of this the resistance of this tissue is greatly reduced. Pedicle grafts are more desirable because of the lymph channels that are presented, but have the disadvantage of puckering at the base of the pedicle, where the graft has been turned. Eloesser overcomes this by means of a semi-detached graft; that is, by cutting through the skin, but leaving the

vessels below, thus avoiding the unsightly puckering. He presented a case of facial paralysis, in which a portion of the temporal muscle had been transplanted into the orbicularis of the lid with good results.

Charles Maghy read a paper on iritis with infection of the mucous membranes. In an analysis of 2796 cases, studied for an inflammation of the uveal tract, optic nerve or retina, Maghy found 112 cases which showed an infection of a mucous membrane, and which, after treatment in 97 cases, showed an improvement in vision which varied from 6/60 to 6/6. He pointed to the fact that it is only in recent years that the relationship existing between inflammations of the uveal tract and retina and those of a mucous membrane and the organs having an internal secretion have received thorough clinical and anatomical investigation. Although it has been claimed by many competent observers that a direct transmission from diseased teeth, infected tonsils, pus in the sinuses, cause irido-cyclitis, yet practically nothing is known concerning the routes of transmission that could in any way be considered positive and final.

There are many factors to be considered in the study of irido-cyclitis, such as changes in the organisms themselves, previous traumatism, fortuitous embolism, gastro-intestinal toxemias, and the anaphylactic state. Elschnig, quoted by the author, distinguishes two types: First, irido-cyclitis occurring especially in women in whom both eyes are attacked with K. P. posterior synechiae, and opacities in the vitreous; onset insidious and relapses frequent. Second, recurrent iritis; this form predominates in middle-aged women who are apparently healthy, followed by recovery, as a rule, without posterior synechiae; it invariably attacks only one eye, and there are frequent relapses with ultimate blindness. In the more severe cases there is ciliary injection, deposits on the posterior surface of the cornea and floating opacities in the vitreous. In some cases an initial attack of glaucoma is present at the onset. As time goes on, more and more posterior synechiae are formed, membranes appear in the pupil, and later cataract. In the most serious cases the eye becomes soft, and it is these cases that are so hopeless and end in total blindness.

In the discussion, Hans Barkan brought out the fact that many cases of iritis are probably not due to focal infection and emphasized the necessity of a careful general examination; Pischel protested against the unnecessary wholesale removal of teeth. Otto Barkan told of a case of acute iritis due to a seminal vesical infection that recurred upon massage of the site of infection.

St. Joseph's Hospital has Busy Quarter—Well attended meetings of St. Joseph's Hospital staff of San Francisco and increased activities in all parts of the institution have characterized the beginning of 1922.

On January 10 C. E. French discussed the "Latest Observations in the Clinics of Central Europe." Case records were presented by T. I. Janes (chronic interstitial nephritis), E. T. Krebs (pelvic peritonitis) and O. Laist (senile gangrene). W. T. Cummins, pathologist, closed with a "Commemoration of Louis Pasteur," his labors being ably sketched.

"Orthopedic Evening" was observed February 14, and the features enjoyed were "Congenital Hip Dislocation," E. H. Smith; "Treatment of Non-Tubercular Osteoarthritis," F. J. Carlson, and "Tubercular Joint Disease," S. J. Hunkin. "Recent Progress in Orthopedics" by F. A. Lowe was put over for March, as was the general discussion.

Reports were received on the downtown clinic, the Benedict basal metabolism outfit and instructive histories by Drossel, Riley, Overstreet, Lowe, C. E. Taylor, and A. S. Musante on trunk, limb, and head lesions.

For March 14 the program prepared included "Value of Hospital Records," by J. M. Stowell and Lowe's paper on orthopedics.

SAN JOAQUIN COUNTY

San Joaquin County Medical Society (reported by H. S. Chapman, secretary)—The San Joaquin County Society held its monthly meeting in the Receiving State Hospital on the first day of February, 1923.

Those present were: Dameron, Walker, B. J. Powell, Holliger, Ray, McGurk, Sanderson, Arthur, Conzelman, Kaplan, Goodman, McCoskey, Marnell, Margaret Smythe, Friedberger, D. R. Powell, and Dozier, with F. F. Gundrum of Sacramento, Chesley Bush of Alameda County, and C. Durand of Colfax as guests.

C. J. Durand's paper on "Some Complications of Pulmonary Tuberculosis and Their Treatment" contained many salient facts among which were:

Pulmonary Hemorrhage—M. S. in moderation so as not to totally arrest cough; calcium short time only; rest in bed; in sanatoria artificial pneumothorax. Effusion ushered in with high fever, etc. If it does not abate remove and replace with nitrogen. Pneumothorax generally late complication; sudden in onset; succussion and coin sound; if symptoms aggravated suspect empyema. Laryngitis—Spray (1) with Rx-menthol, camphor and eucalyptus in albolene; (2) cocaine before meals; (3) rest throat; use pad and pencil; chalmoogra oil not successful. Peritonitis—Aided by opening, but often a shock to pulmonary; Saranac school use quartz vapor lamp.

Chesley Bush, superintendent of Arroyo Sanatorium discussed the Alameda plan, as follows:

Incipient and favorable moderately advanced to Arroyo: more advance to Tuberculosis Branch County Hospital. County Hospital wards visited regularly, and cases showing improvement transferred to Arroyo. Cases educated and gradually put to work. Thirty children with glandular and bone cases receive lessons, etc.

Results: 33 1/3 per cent apparently cured; 30 per cent brought to quiescent. Follow up of discharged, if do not report to Health Clinic.

Dr. F. F. Gundrum of Sacramento, on Coincident Diseases of Tuberculosis and their treatment:

Early Tubercular Cases—Percussion of little use. Auscultation spot of fine rales, persisting several days; in absence history flu.

Sputum may help; X-ray probably overvalued, symptoms the main reliance.

Differentiate—malaria by quinine; typhoid by widal and course; mitral stenosis by auscultation.

Tubercular still in position to contract diseases, so staffs should not be all purely tubercular men.

Discussion was indulged in by Goodman, Friedberger, Marnell, McGurk, and Dameron.

San Joaquin County has completed the plans for reorganization of its health department and has employed Dr. Lewis F. Badger as full-time county health officer.

SANTA BARBARA COUNTY

Santa Barbara County Medical Society (reported by A. C. Soper, secretary)—The society met on January 8 at the Samarkand Hotel, devoting the first half-hour to good fellowship, before the dinner at 7:30, which was served in the large dining-room of the hotel, with thirty-two members present. There were also present the following visitors and guests: George W. Tape, Paso Robles; W. R. Livingston, Oxnard; E. M. Culver, New York; H. F. Rey, Oxnard; three interns from the Cottage Hospital, Koetter, Isaac and Cryst, and Mr. G. W. Curtis, superintendent of the Cottage Hospital.

A comic and hypothetical "case report" by one fictitious Dr. Terence O'Shaugnessy of the Dublin Rotunda was handed to the secretary and read by

him, to the amusement of those present—author unknown, but suspected.

Dr. Tape gave an interesting talk on his early days of practice on the Pacific Coast in the 80's.

The following officers were elected for 1923: P. C. Means, president; G. R. Luton, vice-president; O. C. Jones, first vice-president at large; Robert W. Brown, second vice-president at large; A. C. Soper Jr., re-elected secretary-treasurer.

At the meeting held on January 22, there were ten members present and the following guests: Interns Koetter and Cryst and Dr. Holcombe of Portland, Ore.; G. C. Wagner of Tacoma, and Dr. Mullitt.

G. C. Wagner gave a very able discourse on the results of his seven years experience with the ultra violet rays, and its apparent value in many types of disease abnormalities. Discussion by Ullmann, Hotchkiss, Blatherwidk, Means, Mellinger, and Cunnane.

Votes on delegate and alternate for the State convention resulted in the election of Franklin R. Nuzum as delegate, and George R. Luton as alternate.

SONOMA COUNTY

Sonoma County Plans Three-Year Tax for New Hospital—The present Sonoma County Hospital at Santa Rosa has been receiving considerable undesirable publicity. The result is an aroused public sentiment to improve hospital conditions for the poor. There are, as usual, two principal elements in this discussion; one group wants to build a new county hospital and operate it under the political county government; the other group wants to subsidize private hospitals by paying them a per diem for patients who are the proper charge of the county.

TULARE COUNTY

Tulare County Health Center Elects Officers—John C. Payne, has been elected chairman of the Tulare County Health Center; E. R. Zumwalt, physician in charge of the children's department; Edgar T. Smith, in charge of the dental department; Ray Rosson, the medical department; W. C. Zeller, eye, ear, nose and throat department, and I. H. Betts, surgical department.

Many affections which art has to strive against might be easily shown to be vital to the well-being of society. Hydrocephalus, tabes mesenterica, and other similar maladies, are natural agencies which cut off the children of races that are sinking below the decent minimum which nature has established as the condition of viability, before they reach the age of reproduction. They are really not so much diseases, as manifestations of congenital incapacity for life; the race would be ruined if art could ever learn always to preserve the individuals subject to them. We must do the best we can for them, but we ought also to know what these "diseases" mean.—Holmes' Medical Essays.

One practical hint may not be out of place here. It seems to be sometimes forgotten, by those who must know the fact, that the tongue is very different, anatomically and physiologically, from the stomach. Its condition does not in the least imply a similar one of the stomach, which is a very different structure, covered with a different kind of epithelium, and furnished with entirely different secretions. A silversmith will, for a dollar, make a small hoe, of solid silver, which will last for centuries, and will give a patient more comfort, used for the removal of the accumulated epithelium and fungous growths which constitute the "fur," than many a prescription with a splitfooted R before it, addressed to the parts out of reach.—Holmes' Medical Essays.

BOOK REVIEWS

Text-Book on Minor Surgery. By John C. Vaughn and Athel C. Burnham, M. D. 627 pages, illustrated with 459 engravings; $7.75. Philadelphia and New York: Lea and Febiger. 1922.

A very good book on the better methods in minor surgery, written in a clear impressive way and well illustrated. It should be useful to those interested particularly in minor surgery and local anesthesia, such as the industrial surgeon. L. C. G.

Animal Parasites and Human Disease. By Asa C. Chandler, M. S., Ph. D., Instructor in Biology, Rice Institute, Houston, Texas. Second edition, revised. New York: John Wiley & Sons, Inc. 1922. Price, $4.50.

This is what it purports to be, a text for public health officers, teachers of hygiene, college students, and laymen. The book deals in an interesting manner with the main biological facts and the practical aspects of human parasitization by protozoa, "worms," and arthropods. Compiled very conservatively from the best authorities, it is more accurate than the average text, and reaches a remarkably even standard of excellence in all of its divisions. The modernization of the pages concerning Flagellates is most commendable. However, the far better drawings of chilomastix by Swezy could be substituted to advantage for those by Wenyon. Likewise, it is to be hoped that the atrocious old drawings of giardia, active and cyst, will finally cease to be copied. Wenyon, Swezy, Simon, and others have published replicas of the parasite, which really resemble it as encountered in the routine examination of the stool. The subject of Amebic Dysentery is well presented, but the author has too much faith in the rapid cure of long-standing cases by a few doses of emetin. Extensive thickening and scarring of the colon is beyond repair by emetin, and means permanent impairment of function. In the section on "Worms" the need of a good plate, preferably in color, and drawn to scale, is evident. It should show the different ova in detail, not so much for the purpose of differentiating the varieties from one another, but to differentiate them from confusing vegetable residues in stools. The quality of the book should give it a commanding position in a field in which there is too little competition. M. C. C.

Gonorrhea and Impotency. Modern treatment. By Edwin W. Hirsch, S. B., M. D. 172 pages. Illustrated. Chicago: The Solar Press. 1922.

This book contains nothing new. There are a few hints that may be useful to an office nurse taking care of catheters, sounds, and other instruments, some absurdities, a great many naive statements and descriptions, as well as an excessive number of misprints and grammatical errors.

The author, repeating what others have said many times before him, expresses some thoughts about venereal prophylaxis, and also seems to have acquired good ideas on what he calls the "urethroscopic craze," but we are sure that his enthusiasm in regard to the therapeutic efficiency of the quartz lamp, ultra violet rays and diathermy will sooner or later cool down.

The numerous illustrations are more apt to impress the layman than the medical man. V. G. V.

Principles and Practice of X-ray Technic for Diagnosis. By John A. Metzger, M. D. 144 pages. Illustrated. St. Louis: C. V. Mosby Co. 1922. Price, $2.75.

When a new book on X-ray technic appears, one

reads it over with the hope that at last a practical manual has been produced, one which could be put into the hands of the budding roentgenologist, or given to the technician as a guide to the technical side of X-ray work. This was my feeling when asked to read and review "Principles and Practice of X-Ray Technic for Diagnosis," by Dr. J. A. Metzger, but I am afraid we are doomed to another disappointment, as I find that this book lacks one of the great requirements of such a handbook—accuracy. It would seem most likely that part of the trouble is due to a superficial reading of the proofs, though such inaccuracies as the following are hardly excusable.

For example, we are told to take mastoids with the patient prone "place the patient face downward on the table" and we are given "Figure 11, Position for Mastoid," in which the patient is seen lying on her side. I am sure there is a typographical error on page 33 and that "pyelogram" is not the word intended to be used in line 7. Again, we are told quite a bit about the sweet eye localizer, and given a cut and a chart of another localizer, I believe a Kelley-Koett apparatus.

There are many other little inaccuracies seen in the text. We cannot agree with the writer in what he says about tank developing, and I think it would be quite inconvenient to remove all of the screens from the cassettes when not in use, as the book suggests. It would be quite difficult to produce a book on technic that would suit all roentgenologists, as each has his own way of doing things, but a book on technic to be generally useful in the hands of a technician to fill the needed gap must be really accurate. M. D.

Endocrine Glands and the Sympathetic System. By P. Lereboullet, P. Harvier, H. Carrion, and A. G. Guillaume. Translated by F. Raoul Mason, M. D., with the collaboration of Daniel R. Ayres, A. B., M. D. 378 pages. Philadelphia and London: J. B. Lippincott Company. 1922.

This volume is an attempt to put in one book some of the current opinions of French clinicians concerning the relationship between the ductless glands and the sympathetic nervous system. While it advances nothing distinctly new, the book is replete with observations and suggestions that will merit further investigation.

Harvier, in his chapter on the thyroid, pays no attention to the work of the Americans—Marine and Kimball, nor is the work of Kendall sufficiently stressed. The syndromes are described, and nothing particularly new is added.

There is an interesting chapter on the hypophysis, the writer, however, being a little too certain concerning this much-mooted subject. Our ideas concerning the action of this gland may have to be entirely revised, due to the recent brilliant work of Carmus and Roussy in France, and Bailey and Bremer in this country.

Perhaps the most stimulating chapter in the book is that by Guillaume on the sympathetic system. After calling attention to the work of Bichat and Langley, and the English school, he correlates certain clinical syndrome, such as gastric crisis, Raynaud's disease, angio-neurotic edema and intermittent periodic hydrarthrosis with the function of the sympathetic system.

In the main, the book may be recommended to those who are especially interested in this branch of medicine, but for the beginner or the none-too-well read physician on endocrinology, the volume may make for confusion worse confounded.

R. A. Y.

Elements of Scientific Psychology. By Knight Dunlap. 368 pages. Illustrated. St. Louis: C. V. Mosby Company. 1922. Price, $3.50.

Time was when psychology was a parlor pastime, but it has edged, little by little, into the workshop, and this is distinctly a workshop psychology. The title "Scientific Psychology," at first thought, evokes similar titles, such as "Scientific Physiology" and "Scientific Biology," and the only justification for such tautology is the existence of so much present-day balderdash, masquerading as psychology, and the felt need of some distinction between the older speculative science and the modern experimental one.

The author, in the introduction, says that academic psychology is very little indebted to the clinic or pathology for any advances. Set against this Mercier's statement that academic psychology is valueless to a psychiatrist, and you see a situation that is much in need of remedy. There should be full co-operation of the two. Certainly medicine needs psychology, and a book of this sort should be in the library of every physician, and very frequently in his hands. At the same time the academic psychologist ought to be able to get a great deal from the clinic.

Another statement from Dunlap's introduction challenges attention:

"Psychology is being applied in the fields of education, industry and the arts, and will undoubtedly be applied to medicine before long."

In other words, the school teacher, the candy manufacturer and the sign painter are using psychology, while the physician is not—though he will eventually. A more sympathetic association with the clinic might have shown that even the medical man is applying it. E. W. T.

BOOKS RECEIVED

The Successful Physician. By Verlin C. Thomas, M. D., visiting physician to Franklin Hospital, San Francisco. Philadelphia and London: W. B. Saunders Company, 1923.

Exercise in Education and Medicine. By R. Tait McKenzie, M. D., LL. D., McGill University, Professor of Physical Education and Physical Therapy and Director of the Department of Physical Education, University of Pennsylvania. Third Edition, thoroughly revised. Philadelphia and London: W. B. Saunders Co., 1923.

Practical Infant Feeding. By Lewis Webb Hill, M. D. 483 pages. Illustrated. Philadelphia and London: W. B. Saunders Co., 1922.

Vital Statistics, an Introduction to the Science of Demography. By George Chandler Whipple, Professor of Sanitary Engineering in Harvard University, Member of Public Health Council, Massachusetts State Department of Public Health. Second Edition. New York: John Wiley & Sons, Inc., London: Chapman & Hall, Limited, 1923.

Nutrition of Mother and Child. By C. Ulysses Moore, M. D., M. Sc. (Ped.), Instructor in Diseases of Children, University of Oregon Medical School, including menus and recipes by Myrtle Josephine Ferguson, B. S., B. S. in H. Ec., Professor of Nutrition, Iowa State College, Ames, Iowa. 33 illustrations. Philadelphia and London: J. B. Lippincott Company.

Pharmacology and Therapeutics

COUNCIL ON PHARMACY AND CHEMISTRY OF THE A. M. A.

(Reported by W. A. Puckner, Secretary)

The January report of the Council on Pharmacy and Chemistry notices a number of new remedies admitted to New and Non-official Remedies, as well as some interesting data about other remedies.

Bacillus Acidophilus Milk-Lederle—Lederle Antitoxin Laboratories.

PROPAGANDA FOR REFORM

The Disappointments of Hexamethylenamin—Hexamethylenamin has joined the large and growing group of drugs of which much has been expected, but which have failed to justify the hopes of their champions. The use to which hexamethylenamin is still devoted with apparent scientific justification is in preventing the growth of microorganisms in the urinary tract and in destroying them when they are present in the urine in infectious diseases, such as typhoid fever. The drug is recommended as an antiseptic in cystitis, and as a prophylactic prior to operations on the urinary tract.

Its possible efficacy, however, depends on the elimination through the kidneys with a urine that remains distinctly acid in reaction; otherwise, no benefit is to be expected. Hexamethylenamin has no material antiseptic value as an antiseptic in the cerebrospinal fluid during spinal meningitis. It is not a uric acid solvent. Finally, the drug has been shown to have no diuretic potency. Furthermore, hexamethylenamin is said to be liable to produce renal irritation when the dosage is large or the use protracted. (Jour. A. M. A., January 6, 1923, p. 37.)

Horovitz Protein Substance No. 10—The composition of No. 10 protein substance for syphilis of the Horovitz Biochemic Laboratories is essentially secret. The claims made are unwarranted and may lead physicians to use the product unwisely. A. S. Horovitz, president of the Horovitz Biochemic Laboratories, was referred to in connection with the asserted cancer cure "autolysin" (The Horovitz-Beebe Treatment for Cancer, Jour. A. M. A., July 24, 1915, p. 336). Later, he was connected with the Wm. S. Merrell Co., and appears to have been responsible for this firm's line of "proteogens," which the Council on Pharmacy and Chemistry declared inadmissible to New and Non-official Remedies in 1919. The claims advanced for the products marketed by the Horovitz Biochemic Laboratories bear a striking resemblance to those advanced for the Merrell proteogens. As in the case of proteogens, the Horovitz laboratories have a list of "protein substances," each of which is claimed to be more or less specific against a given disease or condition. (Jour. A. M. A., January 6, 1923, p. 54.)

More Misbranded Nostrums—The following products have been the subject of prosecution by the Federal authorities charged with the enforcement of the Food and Drugs Act: C. J. C. regulator (C. J. Czarnecki), containing iron chlorid, a small amount of plant material, a trace of oil of tansy and alcohol. C. J. C. liniment (C. J. Czarnecki), containing camphor, menthol, chloral hydrate, ether, ammonia water, and alcohol. Allan's red wash and sandalwood emulsion compound (Allan-Pfeiffer Chemical Co.): Allan's red wash (Allan Pfeiffer Chemical Co.), containing zinc sulphate, boric acid, and phenol, eucalyptol, a trace of alkaloid and water and sandalwood emulsion compound (Allan-Pfeiffer Chemical Co.), containing santal oil, mineral oil, methyl salicylate, copaiba, a small amount of magnesium and calcium salts and water. Parrott mixture (Allan-Pfeiffer Chemical Co.), consisting of an emulsion of turpentine oil, methyl salicylate, camphor, copaiba, gum, and water. Parrott sexual pills (Allan-Pfeiffer Chemical Co.), containing strychnin and a compound of iron and phosphorus. Am-O-Lox ointment (Am-O-Lox Co.), consisting essentially of zinc oxid, sulphur, phenol, methyl salicylate and a small amount of dye in a base composed of petrolatum and paraffin. Am-O-Lox prescription (Am-O-Lox Co.), consisting essentially of glycerin, carbolic acid, salicylic acid, methyl salicylate, alcohol, water, and coloring matter. Vigeron (Sydney Ross Co.), sugar-coated pills containing compounds of iron, zinc, manganese, arsenic, phosphorus, and strychnin. (Jour. A. M. A., January 6, 1923, p. 53.)

Present Status of Insulin—The investigators of "Insulin," the new pancreatic extract proposed for the treatment of diabetes, have applied for a patent on the product in Canada, United States, and Great Britain. The patent for Canada and the United States has been tendered, when granted, to the University of Toronto. The University proposes to safeguard the product against commercial exploitation and to ensure the marketing of a standardized product. From the present indications it is hoped that the experimental period will be ended during the first half of 1923, so that the product will become available. Dr. McLeod believes that "insulin" will never entirely replace careful dietary regulations, but that it is of undoubted value in assisting the weakened power to metabolize carbohydrates.

It is to be hoped that the University of Toronto will be able to control the advertising claims and methods of marketing of the product. (Jour. A. M. A., January 6, 1923, p. 36.)

Antiberiberi Vitamin Concentrate — Metz — The Council on Pharmacy and Chemistry reports that the Metz Laboratories have requested the acceptance for New and Non-official Remedies of Antiberiberi Vitamin Concentrate—Metz. The firm supplied adequate information in regard to the process whereby the product is obtained, and has presented evidence to show that the potency of the product is controlled by adequate animal tests. The firm, however, presented no proof to indicate that the product is of value, therapeutically, in human beings, and hence it could not be admitted to New and Non-official Remedies. The firm wished to make available to students and investigators of nutrition a product which is claimed to be antineuritic (anti-beriberi) when fed to pigeons. It increases the food intake of rats fed on substance deficient in vitamin B and causes increased weight, but not to the same extent as does the vitamin B (according to McCollum's nomenclature). The Council deemed that from a scientific standpoint antiberiberi vitamin concentrate (Metz) is suitable for study, suitable for animal experiments and for controlled experiments on man, and hence authorized publication of a preliminary report.

Antiberiberi vitamin concentrate (Metz) is prepared from brewers' yeast.

The vitamin extract is standardized so that 0.065 gm. shall represent the anti-neuritic potency of 10 gm. of freshly pressed brewers' yeast. The product is marketed in the form of powder tablets, and solution (1 cc. containing the anti-neuritic potency of 10 gm. freshly pressed brewers' yeast). (Jour. A. M. A., December 13, 1922, p. 106.)

Culture-Lac Omitted from N. N. R. and Optolactin Not Accepted—Culture-Lac is described in New and Non-official Remedies, 1922, as a culture of bacillus bulgarious manufactured by the Geck Laboratories, New York. The Special Pharmacal Co., Inc., Buffalo, N. Y., advised the Council on Pharmacy and Chemistry that it now owned culture-lac. The product now marketed, however, is not the preparation described in New and Non-official Remedies as culture-lac, but is said to be a culture containing bacillus acidophilus and bacillus bulgaricus. The council directed that the culture-lac of the Geck Laboratories be omitted from New and Non-official Remedies because it is off the market. The council declared the culture-lac of the Special Pharmacal Co., Inc., to be inadmissible to New

and Non-official Remedies, (1) because there is no acceptable evidence for the administration of a mixture of B. bulgaricus and B. acidophilus, and (2) because the preparation was marketed with unwarranted therapeutic claims.

Optolactin is the name applied by Fairchild Bros. and Foster to a tablet said to contain mixed cultures of B. bulgaricus and B. acidophilus. The Council on Pharmacy and Chemistry declared optolactin inadmissible to New and Non-official Remedies, (1) because there is no acceptable evidence for the use of the mixture; (2) because its name is not descriptive of the composition; and (3) because the circular accompanying the trade package is likely to lead to the ill-advised use of optolactin by the public. (Jour. A. M. A., January 13, 1923, p. 127.)

Bacillus Acidophilus and Intestinal Putrefaction—While the administration of soured milk products is at times beneficial, the cause of this beneficial action is still undetermined. The belief that the Bulgarian bacillus can be permanently implanted in the intestinal tract and that this implantation is responsible for the effects is no longer tenable. Of late, attention has been called to the effects of the administration of milk cultures of bacillus acidophilus, which is stated to be a normal inhabitant of the human intestinal tract.

It is reported that this bacillus may be successfully implanted in the intestinal tract, provided a suitable pabulum is provided. It has been assumed that the acidity of putrefactive organisms would be almost entirely suppressed by a change of the flora produced by the administration of milk containing cultures of bacillus acidophilus and that with such implantation, the somewhat hypothetical toxic products charged with harm to the body might also be expected to be suppressed. If indican excretion, however, may be taken as an index of intestinal putrefaction, it now appears that implantation of bacillus acidophilus in the intestine does not lower the putrefactive process.

This suggests that favorable clinical effects produced by the administration of lactose cultures of bacillus acidophilus are not primarily dependent on decreased production of the antecedents of indican. (Jour. A. M. A., January 20, 1923, p. 186.)

Neisser-San-Kahn not Accepted for N. N. R.—Neisser-san-kahn is marketed by the York Laboratories as "a new genito-urinary product," with the claim that "in neisser-san-kahn the genito-urinary surgeon has at his command a new salt of marked value in urethral infections." The product is said to be a definite chemical body, zinc borosalicylate.

Neisser-san-kahn is claimed to be a new chemical compound. A preparation claimed to be zinc borosalicylate, however, was introduced about ten years ago (in Germany) as "mucosan," with claims similar to those now made for neisser-san-kahn. The Council on Pharmacy and Chemistry declared neisser-san-kahn inadmissible to New and Non-official Remedies, (1) because it is an unoriginal preparation under a proprietary non-descriptive name which the council cannot recognize because the York Laboratories are not the discoverers of the product to which the name is applied; (2) the therapeutic claims are unwarranted; and (3) the available evidence fails to show that the preparation claimed to be zinc borosalicylate has any advantage over established zinc salts. (Jour. A. M. A., January 20, 1923, p. 201.)

Quayle's "Bob-White Habit Sinkers"—Charles H. Quayle, M. D., of Madison, Ohio, "Medical Director" of the "Dr. Quayle's Sanitarium, a Retreat for Drug Addicts, Alcoholics, and Cigarette Inveterates" and "Specialist in Drug and Liquor Addiction," has been exploiting an alleged cure for chronic morphinism "and any other drug addiction." Formerly the treatment was "not for sale to any layman or person who wishes to treat himself" and physicians were importuned to use it. Today we find the Quayle's product advertised in the Police Gazette and similar literary productions. A "treatment" was purchased by a layman (for $25) and turned over to the A. M. A. Chemical Laboratory for analysis. The "treatment" consisted of four boxes of pills, labeled as follows:

"No. 1—Eliminative." (Contained three chocolate-coated pills and one capsule.)

"No. 2—Antidote." Contained 323 yellow-coated tablets.)

"No. 3—Nerve Tonic." (Contained thirty-seven red-coated pills.)

"Special Eliminative Bowel Tablets." (Contained twelve white-coated tablets.)

The analysis demonstrated that the "treatment" is essentially (1) active elimination by cathartics, (2) the administration of atropin during the stage of morphin withdrawal, and (3) the use of strychnin at the close of the "treatment." It is evident that this is no more a cure than could be devised by any physician who is familiar with modern medical literature. No physician will believe that a patient suffering from chronic morphinism can cure himself by any such method as that exploited by Quayle (Jour. A. M. A., January 27, 1923, p. 270.)

Child Hygiene and Private Physician—There is just as much need of health work among the children of the middle and well-to-do classes of society as among those of the poorer classes, says Borden S. Veeder, St. Louis (Journal A. M. A., December 30, 1922). The best results can be obtained only if there is direct and constant supervision of the child through infancy and childhood by one physician, who sees the child in sickness as well as in health, and who has an intimate and personal knowledge of its parents, its home life and daily environment, its play and companions. Without a full knowledge of all of these factors, the value of direct supervision is limited and handicapped. Furthermore, this supervision must reach the children of all classes and must not be limited to the economically dependent. The person in the ideal position to supervise the health and welfare of the infant and child is the private physician—the man in general practice. If this is true, the question naturally arises, Why, then, is this work not done by the private physicians? Why the necessity for the welfare clinic or conference? The answer is simple: Unfortunately, the vast majority of physicians in private practice are not qualified to supervise the development of the infant and child. Few recognize its importance; fewer still are interested, and, most important, even fewer have been trained to apply in general practice the methods which have met with such success in infant and child hygiene work. The fault or blame lies in the training and education of the private physician. In the past—and the same holds to a large extent at present—medical students have been trained to think in terms of disease rather than of health, and teaching, which has been almost entirely in hospitals or dispensaries, has been directed almost exclusively to the recognition and treatment of pathologic conditions. Such teaching as the student has received in hygiene or health has been of an abstract nature and not concretely applied to the individual. The lack of knowledge on the part of the private physician in regard to the hygiene and development of the infant and child is the fault of the physician's training, not of the physician. There must be a distinct change in the character of pediatric teaching, and this change is already taking place in better medical schools. For example, instead of spending hours over the classification and pathologic physiology of the nutritional diseases of infancy, the point that must be emphasized and driven home is the care and feeding of the normal infant: the prevention of disease must be stressed equally with the pathogenesis, diagnosis, and treatment. When this is done, physicians will be interested in giving ideal supervision to the infant and child.

Nevada State Medical Association

Nevada State Medical Association News—Post-Card Bulletin, No. 1, Vol. 5 of the association says:

"Well, here we are again after two months of silence during which time ye editor has been galivanting all over the United States—and part of West Virginia. There is a song which states that 'The longest way round is the shortest way home,' but we have found that shipping our goods from Goldfield to Reno by way of New York City is certainly not the cheapest. Your secretary suffered some kind of a brainstorm, the first of December, thought he wanted to live in N'Yawk, and didn't know any better until he got there and took a couple of looks, but now he knows that there is no place like the land of the west, with its sand and sagebrush. We promise to be good from now on, and hope to soon make up for lost time. Our new president has made the committee appointments for the year, and we will try to get them in the next issue, but we want to use most of this on legislative matters. There are three bills, so far, of special interest to the medical profession: one to repeal the present State dry law so that an entire new Act can be passed, a bill to ratify the Sheppard-Towner Act, and a bill to regulate the practice of nursing. There is also a chiropractic bill, of which you will hear more later. Get after your legislators to defeat the bill to ratify the Sheppard-Towner Act, and make it strong. We object to the bill on the following grounds: (1) There is no real need of such legislation in Nevada, as the maternity situation is being well taken care of. (2) The bill does not provide any material relief for mother or child, and certainly does not provide the relief that the women of the country ask for. (3) It is socialistic and paternalistic in character, precedenting government control. (4) Its ratification will enforce a double tax; Federal tax and then State tax. (5) It is an Act of fines and rewards, with unequal distribution of tax moneys. (6) It is simply an appropriation measure which will spend a considerable amount of money in giving easy jobs to propagandists, who use sympathetic promises to further their own interests. (7) The application of the law will require the services of a number of nurses, and we all know how hard it is to get a real nurse now without having any more of them tied up in public work. Get busy and do all that you can, and do it now. We are now ready to receive dues and you can address us as follows: Dr. Horace J. Brown, Sec'y, No. 14, Thoma-Bigelow building, Reno, Nev. We will send out statements to everybody as soon as possible. Merry Christmas and Happy New Year (even if it is a little late)."

Nevada Medical Bulletin, Reno, Nev., January 15, 1923—As this delayed edition goes to press the Legislature is in full swing, and you can take it from us that when it comes to swinging a nasty club those legislators are the duck's quack. Our special committee that conferred with the committee from the Nurses' Association, and our Judiciary Committee labored hard and finally brought forth a nurses' registration bill that seemed absolutely fair to all concerned, and we all felt sure that it had a good chance to pass, but they wouldn't even let us talk to them about it. They hauled it out of committee one quiet afternoon, shoved it into the abatoir, and the next we knew it was hanging on a hook with its nose shiny and its hat on crooked. However, it has been reintroduced in the Assembly and we hope it will receive more consideration. If you can do anything to help, please do so at once, and no matter how you feel about it the secretary would like to hear from you in regards to it. The nurses surely deserve to have some kind of a law that will keep absolute impostors from infringing on their rights. It looks now as if the Legislature will adopt the Volstead law as the law of the State, which is very satisfactory to us, so do not fail to write your legislators to vote for it. The Judiciary Committee of our Association has had introduced in the Senate a bill providing for the establishment of a public general hospital in such counties as desire (and vote for) one. Its purpose is to provide ample facilities for the sick and disabled, and such hospitals will be open to every regular physician. If passed it will allow Elko County to legally use to full advantage its beautiful new hospital, and it is probable that Washoe County will petition for a vote to give them an ample, modern institution that will be recognized by the A. C. S. and A. M. A. We sent out statements a few days ago, and a few of our members have responded with the necessary check to cover dues, but the great mass are evidently still paying Christmas bills—or else they are too busy to write checks. We are sorry to note that a few are so far in arrears that we will have to drop them from our rolls unless they pay up before March 1. We don't want to lose any, so if you happen to be one of the tardy ones shake the baby's bank and let's hear from you. When do you want the annual meeting, June or October?

"Big Noises."—Bruno Lessing, (San Francisco "Examiner") philosophizes about "Big Noises" in the law, the church and in medicine.

"Empty vessels sound the loudest. The big bass drum can make more noise than the violin or the cello. One cow eats more than a hundred nightingales.

"These are the reflections of thinking people when they behold the clamoring notoriety-seeker trying to attract attention to himself. As a rule the man who mounts to the housetop and shouts, 'I am the greatest in my line,' is merely an object of ridicule. The exception to the rule, however, appears when people believe him and ultimately pay for being disillusioned.

"When Dr. Quackus tells the world that he can cure tuberculosis, cancer and rheumatism he attracts attention. Thousands flock to him. He becomes famous overnight. Unfortunately very few ever hear of the ultimate fate of those thousands. They are never cured by Dr. Quackus.

"The great physician does not yell aloud. He does not advertise. He doesn't arouse false hopes. He is not a bass drum.

"It is exactly the same in every other line of human endeavor. Counselor Shyster, whose name appears in the public press every day, in connection with everything that is going on, is never the best lawyer. A really good lawyer—leaving dignity aside—is too busy with his cases to rush into print.

"The Rev. Dr. Cockroach is not a great clergyman. Rabbi Wiseheimer is not a great rabbi. These people are politicians, to an extent, devoting to their self-aggrandizement the time that they should devote to pious thoughts and deeds of charity.

"Every newspaper reporter will corroborate this fact; the greater and abler the physican, the lawyer or the preacher, the more reluctant he is to grant an interview—and, the more of a charlatan he is, the more eagerly will he talk.

"The trouble comes when ignorant souls, in distress, seek the counsel of such people. How can they find a really able physican or lawyer or divine? What can be done to steer them away from these self-inflated names that attract them?

"It is a problem that has bothered many an intellectual mind. What solution would you suggest?"

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REPORT OF THE INDUSTRIAL ACCIDENT COMMISSION

Abstract of Those Points of Interest to Physicians

The outstanding fact in the Annual Report of the Industrial Accident Commission of the State of California, as submitted to Governor William D. Stephens, is that there was a decrease of 42 industrial deaths in 1921 as compared to 1920, the totals respectively being 550 and 592. The statistics further show a reduction of 38.39 per cent in the industrial death rate of California for the calendar years 1914 to 1921, inclusive.

There were 1643 permanent injuries reported in 1921 to the commission, as compared to 1929 in 1920. There was also a reduction in temporary injuries, as shown by the totals of 123,336 in 1921 and 131,587 in 1920. In 1921 temporary injuries to the total of 60,685 did not cause loss of time from work.

Out of the 550 deaths last year there were 453 compensable, and the remaining 97 did not come under the commission's jurisdiction. The record shows that 114 were caused by varied classifications; 98 by railroad, vessel and stevedoring operations; 90 by construction; 78 by manufacturing; 71 by public utilities; 53 by mining, quarrying and oil producing; 46 by agriculture.

There were 5 women killed while at work in 1921; the similar total in 1920 was 3.

Total dependents to the number of 701 resulted from 302 fatalities, 117 partial dependents were left in 59 cases, in 159 cases there were no dependents, and in 30 cases the degree of dependency was unknown. The average age of the widows was 38.7 years. The dependent children averaged 8.8 years.

The average age of the 550 workers killed during 1921 was 38 years. The average wage was $33.39 a week. In 1920 the average age in the fatal cases was 37 years and the average wage $31.78 a week.

Life pensions were awarded in nine cases of serious and permanent injuries. There were sixteen such injuries in 1920. Injuries that caused time loss of over seven days numbered 32,286.

The Statistical Department's report shows that in 1921 there were 237 permanent eye injuries, 27 arms amputated, 658 fingers lost, 23 legs or feet lost, and 60 toe amputations.

Occupational diseases numbered 576 in 1921, as compared to 596 in 1920.

Compensation and Medical Costs

California's 125,529 injured workers (including the dependents of the 550 killed) received compensation to the amount of $5,924,582. The medical, surgical, and hospital payments totaled $2,496,176. The two combined give a grand total of $8,420,758.

Self-Insurance

During the fiscal year ending June 30, 1922, twenty-six employers in California received certificates of consent to self-insure. A total of 263 certificates have been issued since January 1, 1918, the date on which this requirement of security became effective. Employers, to the number of fifty-two, requested revocation of their certificates during the year, thus leaving 211 in operation at the close of the fiscal year. Approximately 195,143 employes are protected under this plan, and the State Treasurer has received surety bonds or collaterals to the amount of $3,652,000 to provide security.

Compensation Department

There was a decrease of thirty-two contested claims during the fiscal year, as compared to the previous year, but 2277 disputes were decided as against 2056 reported in the last Annual Report. Compensation was awarded in 1260 of the 2277 contests, 651 were denied, 261 were dismissed, and 105 were settled. The main questions of controversy were extent and duration of disability (548 cases), whether disability was result of injury (308 cases), whether injury was in course of employment (257 cases), extent of permanent disability (205 cases), hernia (200 cases). The record shows denial of 63 per cent of the hernia claims.

Medical Department

The members of the Commission's medical staff made 1299 general physical examinations during the year, 810 in San Francisco and 489 in Los Angeles. Special medical examinations were requested by 320 insurance companies and 115 employers, and 193 were made in behalf of the Commission. Opinions to the number of 1020 were given and 507 bills approved. The gradual growth of understanding on the part of the medical profession is referred to in an appreciative way and the cordial cooperation now existing is praised. While it is recognized, a fee schedule is not the most satisfactory method of adjusting charges, yet no better plan has been devised. Physio-therapy and work are emphasized as necessary in the proper care of many cases of injury.

State Compensation Insurance Fund

The total net premium writings of the State fund for 1921 were $5,004,880.67. The total premiums of all carriers (thirty-six in number) for the same year were $13,554,107.02. The State fund's percentage of the total is 36.9 per cent.

Two new branch offices were opened in 1921, one in Stockton and the other in San Jose, thus providing seven branches in California, beside the main office in San Francisco.

The plan adopted for the distribution of dividend savings is operating admirably. Under policies issued in 1921, the table provides an average dividend of 30 per cent.

The State fund has a net surplus over and above all possible liabilities which would enable it to meet any possible call upon its resources due to catastrophes.

On June 30, 1922, the State fund's total admitted assets were $5,546,773.01, its liabilities (including reserves) $4,049,802.63, and its surplus $1,496,170.38.

The Doctor Sofie A. Nordhoff-Jung Cancer Research Prize—Dr. Sofie A. Nordhoff-Jung of Washington, District of Columbia, United States of America, has founded an annual prize of $500 bearing the title of "The Sofie A. Nordhoff-Jung Cancer Research Prize." This prize is destined for the encouragement of researches in the etiology, prevention, and treatment of cancer. It will be awarded by a commission, composed of members of the University of Munich, Bavaria, and be granted for the first time in December in the year 1923. The commission consists of professors Borst, Doederlein and Sauerbruch, with Professor von Romberg as chairman. This body is empowered to elect successors. The award will be made as a recognition of the most conspicuous work in the world literature bearing on cancer research, done at a time antecedent to the allotment of the award. Though the prize will not be awarded on a competitive basis, the commission invites all research workers in cancer to submit literature on this subject.

New Improved Urethral Irrigator—George L. Eaton, M. D., of San Francisco, Cal., has devised and the Travers Surgical Company are marketing a urethral irrigator made of metal. It can be sterilized by boiling; the flow of solution can be regulated on the handle, or cutoff completely. The shield is constructed so as to prevent any splashing of solution on the patient, and the irrigator can be handled conveniently by the patient.

ANNUAL REPORT, 1922, BOARD OF MEDICAL EXAMINERS

The 1922 annual report of the Board of Medical Examiners, filed with the Governor, shows a very active year just closed, as outlined in the following digest of the various topics discussed in said report.

The November, 1922, election, creating a chiropractic and osteopathic board, promises to materially diminish the work of the investigation and legal departments of the Board of Medical Examiners, as according to the 1921 report and reflected in the 1922 report, approximately 70 per cent of actions for violation of the law were taken against those who held themselves out as chiropractors.

The osteopathic initiative promises to take from the jurisdiction of the Board of Medical Examiners approximately 924 graduates of osteopathic schools. It is estimated that these two intiatives will result in the annual loss of revenue as follows:

(a) From the osteopathic initiative (application fees and taxes), $5123.

(b) From the chiropractic initiative, revenue from fines, $4141.50.

No doubt the creation of these two boards will cause endless confusion on the part of those who desire to ascertain whether or not a specific individual is the holder of a license entitling him to practice any system of the healing art in the State of California. The chiropractic and osteopathic initiatives provided for the publication of a directory by each board, hence, hereafter, it will be necessary to investigate the records of all three boards in order to ascertain whether or not an individual is licensed in this State.

The personnel of the board was changed during the past year by the resignation of Louis C. Chandler, D. O., Los Angeles, who was succeeded by Walter V. Brem, M. D., Los Angeles, appointed December 18, 1922.

Associate Counsel C. D. Ballard of Los Angeles resigned and was succeeded by Mr. Leo M. Rosecrans of Los Angeles, effective December 15, 1922.

Applications in the number of 831 were filed during the year, and 646 certificates were issued.

It is interesting to note that the examination records show that no graduate of the University of California Medical School, Stanford Medical School, or the College of Medical Evangelists failed to pass the written examination, thus putting these three schools in the 100 per cent class, a record that the University of California has maintained for the past thirteen years.

Approximately twenty-six graduates of chiropractic schools successfully passed the written examination and were licensed as drugless practitioners.

A survey of the reciprocity activities show that 454 individuals licensed in other states have been afforded recognition of their credentials and granted reciprocity licenses to practice in California. The continued influx from other states shows that an ever increasing number of Eastern residents are availing themselves of the opportunity of enjoying our California climate. On the other hand, only thirty-one of those licensed by written examination in California have sought a residence in other states.

The report of the legal department shows that twenty-six licentiates were called before the board during the past year to answer charges, to show cause why their licenses should not be revoked, preferred, as follows:

Narcotic complaints, 14; abortion charges, 4; penitentiary commitment, 2; superior court convictions, 2; miscellaneous complaints, 4.

Of this number six suffered the revocation of their certificates, three had their certificates suspended, while five, after having been found guilty of the charges, were placed on probation. In addition thereto four individuals had their certificates to practice in California restored to them.

The report of investigations and prosecutions, northern district, shows 157 actions, while that of the southern district shows 232 actions, making a total of 398 actions during the year against those charged with violation of the medical practice act. Of this number twenty-five were convicted in the north and seventy-seven in the southern part of the State.

The records of deceased for the past five years show that an average of 138 licentiates passed to the Great Beyond each year. The year 1922 is the only year that reached the maximum death rate, when 138 licentiates died and in addition thereto thirty-six doctors of medicine (not licensed) are reported to have died in the State of California.

The report of receipts and expenditures shows the finances of the board to be in a healthy condition.

The annual report will be printed in the 1923 directory published by the Board of Medical Examiners, which it is expected will be ready for distribution some time the latter part of May.

NEW MEMBERS

F. D. Arthur, F. A. Butler, Edgar J. Farrow, E. F. Hoover, W. M. Thomas, San Diego.

Elizabeth Emerson, Santa Rosa.

T. R. Trick, Los Banos.

Luzerne B. Barnes, Newcastle.

Philip H. Arnott, George W. Cox, Harry R. Oliver, Margaret J. Wilson, Rea E. Ashley, Bertrand S. Frohman, Vincent de P. Brown, Howard H. Johnson, Victor Finsand, Hubert R. Arnold, R. Cadwallader, Thomas S. Burns, Leonard R. Thompson, Hans Von Geldern, Harry C. Coe, San Francisco.

A. A. Bird, Boles A. Rosenthal, Nolton N. Ashley, Oakland.

A. Metzner, Harry F. Becker, A. J. Rosanoff, Los Angeles.

DEATHS

Gwaltney, Sylvester. Died at Los Angeles, January 2, 1923, age 59. Graduate of Marion-Sims College of Medicine, St. Louis. Doctor Gwaltney has been in practice in Los Angeles for more than a quarter of a century. He was a member of the Los Angeles County Medical Society, the State Medical Society, and the American Medical Association.

Purkitt, Theodora. Died at Willows, February 8, 1923, age 67. Graduate of Cooper Medical College, San Francisco in 1894. Doctor Purkitt was one of the first women physicians in the Sacramento Valley, having practiced medicine continuously up to a year ago. She was a member of Glenn County Medical Society, the State Medical Society, and the American Medical Association.

Rooney, Henry Thomas. Died at San Francisco, January, 1923, age 47. Graduate of Cooper Medical College, San Francisco, 1902, and licensed in California in 1903. He was a member of the San Francisco County Medical Society, the State Medical Society, and the American Medical Association.

Tucker, Elijah Jones. Died at Oroville, January 30, 1923, age 73. Graduate of National University of Arts and Sciences Medical Department, St. Louis, 1882. Licensed in California, 1891. He was a member of the American Medical Association.

Williams, J. Marvin. Died at Los Angeles, February 4, 1923. Graduate of the Wisconsin College of Physicians and Surgeons, Milwaukee, and licensed in California in 1914. He was a member of the American Medical Association.